CONTENTS

AUGUST, 1933

Honey Markets	452-453
Editorials	457-459
Migratory Beekeeping—Frank Wells	460-462
Honey Sensitization—W. Ray Jones, M. D.	462-463
Lighting the Interior of Beehives—Dr. E. F. Phillips	464-467
Dry Seasons Cause Changes in Bee Pasture—E. R. Root	467-470
Plant Poisoning of Brood of Bees—C. E. Burnside and R. E. Foster	470-473
Heavy Loss of Young Queens—Harold I. Perrin	474
Pollination of Oranges—J. A. Klingensmith	474-475
Beekeeping in Turkey—D. P. Cushing	475-476
Knowledge—Allen V. Puccini	476
Original Bee Inspectors—J. E. Eckert	476-477
The Wonder Drink—Fred W. Muth	477-478
Marking Queens—Wainwright Evans	478
Living from Hand to Mouth—Jack Deyell	478-479
Comments on Current Items—J. F. Dunn	479
Spinster Jane Says—	479-480
Told by the Jay	481
From North, East, West and South	482-489
Heads of Grain from Different Fields	490-491
Picture Page	492
Food Department—Malitta D. Fischer	493-495
Just News	496
Gleaned by Asking—Geo. S. Demuth	497-499
Talks to Beginners—Geo. S. Demuth	500-501

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The A. I. Root Company, Publishers, Medina, Ohio

Geo. S. Demuth and E. R. Root, Editors; H. H. Root, Assistant Editor;
M. J. Deyell, Business Manager

Sell Your Honey at a Good Price

Roadside Signs

Waterproof "Duckine"

3 for $1.00

Postpaid.

Colors are sun-proof blue and yellow with white showing through in places. One sign (above) 18 x 36" and two signs, 24 x 42", like the sign to the right.

The A. I. Root Company - Medina, Ohio

WALTER T. KELLEY

NO CASH NEEDED

I will accept your wax in trade for queens and supplies at 15c per pound F. O. B. Houma. Queens will be higher next year—better requeen now.

QUEENS, 25c EACH

Young, 1933, laying, 3-banded Italians, guaranteed to please you.

Gulf Coast Bee Co., Houma, La.

Honey Containers

SEASON 1933-1934

FRICTION-TOP PAILS AND CANS

F. O. B. Cars, Lansing, Mich.	25	50	100	200	500	1000
2½-lb. cans	$0.90	$1.65	$3.10	$6.10	$14.75	$28.50
5-lb. pails	1.60	2.80	5.50	10.90	25.90	51.50
10-lb. pails	2.20	4.00	7.90	15.75	38.00	75.00
F. O. B. Cars, Chicago or Wheeling, W. Va.			100	200	500	1000
2½-lb. cans			$2.75	$5.35	$13.00	$25.75
5-lb. pails			4.70	9.35	22.40	44.25
10-lb. pails			6.85	13.50	32.50	64.00

FIVE-GALLON CANS

2 Cans to Wood Case, 2½" Openings

	F. O. B. Lansing	F. O. B. Chicago, or Wheeling, W. Va.
Each Case	$0.95	
10 Cases	8.60	$ 7.50
25 Cases	21.25	18.50
50 Cases	42.25	35.50
100 Cases	84.00	70.00

In Bulk, 2½" Openings.

	F. O. B. Lansing	F. O. B. Chicago, or Wheeling, W. Va.
Each	$ .33	
6 Cans	1.90	
12 Cans	3.75	
50 Cans	13.50	$12.00
100 Cans	26.50	23.75
200 Cans	52.25	47.25

TALL CLEAR HONEY JARS

F. O. B. Cars, Lansing, Mich.	No. in case.	Per case.	10 cases.	25 cases.
5-oz. jars	24	$0.70	$6.50	$15.50
8-oz. jars	24	.75	6.90	17.00
16-oz. jars	24	.90	8.50	20.50
32-oz. jars	12	.70	6.40	15.50

"Bee Hive" honey jars in 8-oz., 16-oz., and 32-oz. size, are 3c per case higher than tall jars.

CORRUGATED PAPER SHIPPING CASES

We furnish the 24-lb. cases for 4¼x4¼x1⅞" sections, the 4¼x4¼x1½" sections, and the 4 x 5 x 1⅜" sections. Priced as follows, f. o. b. cars, Lansing, Mich:

24 Section Paper Shipping Cases....5, $.95 10, $1.75 50, $8.50 100, $16.50

"A" GRADE TIN PASTE

"It Sticks." Suitable for sticking labels to either glass or tin. Prices as follows: 1 pint, 30c; 1 quart, 55c; 1 gallon, $1.75. Postage extra.

Plain cellophane wrappers for 4¼x1⅞" sections, for 4¼x1½" and for the 4x5" sections per 100 for 50c; 500 for $2.25; 1000 for $4.25.

Decorated cellophane wrappers for 4¼x1⅞", for 4¼x1½" and 4x5" sections as follows: 100 for $1.25; 500 for $5.75; 1000 for $11.00. The shipping weight of 1000 wrappers is 5 lbs.

All prices subject to change without notice.

M. H. HUNT & SON, 510 North Cedar St., LANSING, MICH.

HONEY CONTAINERS

Over four carloads in stock to assure prompt shipment of your orders.

COMB-HONEY WRAPPERS, CARTONS AND CASES
FRICTION-TOP PAILS, SIXTY-POUND CANS
GLASS JARS

Write for price list. It's a money saver.

The A. I. Root Company of Iowa, Council Bluffs, Iowa

Honey Markets

Information from Producing Areas (first half of July)

California Points: Southern California—The crop of sage honey that will grade white or lighter is very short, especially near the coast. Some buckwheat-sage honey is now being extracted, but the flow will be light, though better inland than along the coast, and in some sections heavier than anticipated a few weeks ago. The quality is said to be below that of last year. Many beekeepers near the coast are moving to alfalfa fields to secure enough honey for winter stores. The alfalfa flow in the Imperial Valley is reported normal by some beekeepers, but others expect only half a crop. Considerable loss reported in the Valley from arsenic poisoning on cantaloupe vines. Most distress lots of orange have been sold, though the market has not yet strengthened. Little inquiry reported for export or for eastern shipment, and mostly at low prices. Those beekeepers who are able to hold are asking higher prices, especially on orange, than are given below. Sales by beekeepers in ton lots or more, per lb., orange, water white, 5-5¼c; extra white, 4¾-5¼c; 1 sale reported at 6c; white, 4½-5½c; extra light amber, 4½c; sage, white, wide price range, 4-4⅞; buckwheat-sage, new crop, light amber to extra light amber, 3½-3¾c; occasional sale higher and lower; old crop extra light amber, 3⅛-3¾c; light amber, 3¼-3½c; Imperial Valley, alfalfa, new crop, light amber to extra light amber, 3-3½c; mostly 3⅛-3¼c; many beekeepers holding for 3½c, and one sale reported at 3¾c. Beeswax is moving freely with good demand at 11½-13c, mostly 12c cash, delivered Los Angeles. Central California—Conditions are somewhat better and the buckwheat yield is a little heavier than anticipated. Third cutting of alfalfa is well advanced, and present prospects are for a light flow in the San Joaquin Valley. Orange prices are slightly lower. Sales reported orange, white to water white, 4½-4¾c; few 5c; mixed light amber, 3-3¼c; alfalfa, light amber, 3¼-3½c; extra light amber, 3¾c. Beeswax practically unchanged at 10-12c per lb., according to quality and grade. Northern California—The second cutting of alfalfa is well under way and star thistle is also yielding some nectar in the Sacramento Valley. The thistle outlook, however, is very poor. Cool weather is conserving moisture and delaying the crop. Migration to the hills from the Sacramento Valley has been above normal. Inquiry for honey is good with practically no honey held over. Few sales reported, light amber mixed flowers, 3-3¼c per lb. Beeswax, 10½c per lb.

Pacific Northwest—West of Cascades—Crop prospects have improved though all blooms are late. A fine crop is on now from figwort, and this flow should last for a month, when it will be followed by fireweed. Scattered vetch is yielding freely and it appears that clover and alfalfa are not damaged as much as previously thought. A moderate flow is on from alsike. Little honey remains unsold. East of Cascades—Bees are building up well for the second cutting of alfalfa, following the severe losses earlier from spray poisoning. Prospects for the balance of the season are good where colonies are sufficiently strong to take advantage of the flow. Sweet clover appears to be more plentiful than anticipated. Prices are slightly higher. Old honey is cleaned up, but some new crop light extracted in small pails reported sold at 7c per lb.

Intermountain Region—Very little old honey remains unsold, with many beekeepers completely sold out. The market is fully firm, with 1 car old crop white sweet clover and alfalfa reported sold at 4c per lb.; few 60's have moved at 5-7c per lb., and small pails at 6-8½c per lb.; extra light amber 60s, 5c; small pails, 6c per lb. Few sales white comb, $2.00 per case. The beeswax market is stronger. Details by states follow: Colorado—In spite of the dry weather the honey flow has continued on the eastern slope and a few beekeepers now expect a normal crop. First cutting alfalfa was allowed to bloom unusually long but second cutting may be cut before it blooms. Little sweet clover is available and many beekeepers are migrating to other territory. On the western slope alfalfa is very late and little bloom is in evidence, with the weevil bad in spots. Wyoming—With little honey secured from alfalfa, and with grasshoppers prevalent, beekeepers are looking for a short crop except in sweet clover areas, where a good flow is anticipated. Many are moving to more favorable locations. Montana and Idaho—Conditions are spotted, with many colonies still too weak to take advantage of the flow. The weevil did some damage to the first alfalfa crop but a fairly good flow is anticipated from second crop. Bees are not working much on white sweet clover, and the flow is over from yellow sweet clover. Nevada—Bees are making a living, but prospects for a crop from alfalfa are not good. A small surplus was secured in the mesquite area in the southern part of the state.

Arizona—The honey flow from desert plants has stopped suddenly, and recent lack of rainfall renders the outlook for fall honey doubtful. This season's crop of mesquite, however, is the largest in several years. Alfalfa honey is being extracted. Ton lot sales reported, alfalfa, light amber to extra light amber, $3.75-4.00, mostly $3.75 per case of 120 pounds; white mesquite, mostly $4.25 per case. Prices are higher than those of last year but the quality of the honey is said to be better.

Southwestern States—Southcentral and southwestern Texas—The mesquite flow is irregular, some beekeepers reporting a bumper crop and others a light yield. Cotton is also yielding, but needs more rain for a good flow. Some beekeepers report practically a failure in their territory. West Texas—Hot, dry winds are killing much vegetation and the first crop failure in 20 years is anticipated. Bees are barely making a living from button-weed and sunflowers. Northeast Texas—A good flow from cotton is in prospect, being improved by recent rains. A short crop of clover and horsemint honey is reported. Arkansas—A half crop seems to be in prospect, with bees only making a living at present as the drouth continues. Prices are slightly higher, with small pails extracted selling at 8c per lb. Beeswax, 10c per lb.

Plains Area—Red River Valley of North Dakota and Minnesota—Recent rains have helped sweet clover, and bees are storing from both sweet clover and basswood. The flow is irregular and bees in some sections are unable to make a living and are starving. In more favored spots beekeepers are already beginning to extract. Practically no 1932 honey remains unsold. Beekeepers anticipate higher prices for the new honey. Few sales small pails, 6c per lb., 60s, 5½c per lb. South Dakota—Dry weather and grasshoppers cut short the flow of early yellow sweet clover. Bees are making little surplus and some are in need of feed. Demand is better this summer than usual, with sales in small pails reported at 8c per lb. Iowa and Nebraska—The crop is spotted, some securing a big flow from sweet clover, with 150 pounds surplus already of exceptionally fine quality, but many beekeepers do not expect 50 pounds surplus as a result of the drouth. Recent rainfall, however, has improved crop prospects, especially from white sweet clover. Beekeepers are advancing their

We are Cash Buyers of Honey and Beeswax
Submit samples and best prices, freight prepaid Cincinnati
We also furnish cans and cases.
The Fred. W. Muth Co. PEARL & WALNUT CINCINNATI, O.

prices. One lot white sweet clover reported sold at 5¾c per lb., small pails water white, 9c. Beeswax, 12c per lb. Kansas and Missouri—High temperatures have continued during much of the time, curtailing the flow, which was already short as a result of one of the driest Junes on record. Recent rainfall has improved sweet clover and alfalfa prospects. Basswood yielded very little and white clover dried up early. The quality of the honey is unusually fine and higher prices are anticipated. Few sales amber extracted, 4c per lb. Beeswax, 12c per lb.

Northeastern States: New York and Pennsylvania—Hives are full of bees, but due to drouth conditions over a wide area the flow of white honey has been very short. In some sweet clover and alfalfa locations an average crop may be obtained, but many are looking for not more than 20 pounds to the colony and some colonies may have to be fed. Many sections of comb honey will be unfinished. Basswood yielded poorly. Buckwheat is being planted freely and may provide a fall crop. Few sales reported, white extracted, large lot, 4.6c per lb.; 60s, 6½-8c per lb.; amber clover, 60s, 5c per lb.; buckwheat 60s or more, 4c per lb. Few sales No. 1 comb honey, $2.40 per case. Beekeepers look for higher prices on new crop honey.

Monthly Report of Honey Producers

Early in July we sent the following questions to honey producers: 1. How does the honey flow (if any) thus far compare with normal? Give answer in per cent. 2. What is your estimate, at this time, of the 1933 honey crop as compared with the average of the past five years? Give answer in per cent. 3. At what price has honey been sold or contracted for, if any, in large lots (carload or less) in your locality during the past month for (a) extracted honey, per pound? (b) comb honey, fancy and No. 1, per case? 4. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No 1, per case? 5. What is the retail price to consumers in your locality of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per section? 6. How is honey now moving on the market in your locality? Give answer in one word as slow, fair or rapid. 7. Is there any of last year's honey left in the hands of producers in your locality? If so, what per cent was carried over? The answers received are as follows:

State. Name.	Estimate Honey flow.	1933 crop.	Large lots. Ex.	Comb.	To grocers. Ex.	Comb.	To retailers. Ex.	Comb.	Movement.	1932 carryover.
Ala. (J. C. Dickman)	60	75	..	..	$.40	$2.50	$.60	$.12	Slow	0
B. C. (A. W. Finlay)	100	..	.10½	..	.75	..	.90	..	Fair	0
Calif. (L. L. Andrews)	40	30	.05¼	..	..	..	.59	.14	Fair	0
Calif. (Geo. Larinan)	0	0	..	..	..	..	..	..	Fair	5
Colo. (O. E. Adcock)	100	100	..	..	.42½	3.00	.55	.15	Fair	..
Colo. (J. A. Green)	25	..	..	..	.30	1.60	.40	.10	Fair	25
Conn. (Allen Latham)	100	..	..	..	..	4.50	.80	.27	Slow	15
Fla. (C. C. Cook)	200	200	.03	..	.30	..	.40	..	Slow	50
Fla. (Harry Hewitt)	165	150	.04	..	.45	..	.60	..	Slow	0
Ga. (J. J. Wilder)	95	90	.04½	..	.35	..	.50	..	Slow	0
Ill. (A. L. Kildow)	50	50	..	..	..	..	.50	..	Slow	0
Ind. (Jay Smith)	25	50	..	..	.50	..	.65	.15	Slow	0
Ind. (T. C. Johnson)	25	50	..	..	.50	3.00	.60	.15	Fair	0
Ind. (E. S. Miller)	..	..	.04	..	.45	2.40	.60	.12	Slow	10
Iowa. (E. G. Brown)	125	100	..	..	..	..	.50	..	Fair	0
Iowa. (Frank Coverdale)	125	150	..	..	..	..	..	..	Fair	1
La. (E. C. Davis)	75	90	..	..	.35	..	.50	..	Slow	10
Me. (O. B. Griffin)	70	50	..	..	..	..	..	.30	Slow	15
Md. (S. G. Crocker)	80	75	..	..	.60	3.50	.75	.25	Slow	10
Mich. (I. D. Bartlett)	100	100	..	..	..	..	.50	..	Slow	10
Mich. (L. S. Griggs)	100	100	..	..	..	..	..	..	Slow	10
Mich. (Floyd Markham)	60	75	..	..	.38	2.40	.50	.15	Fair	10
Mich. (E. D. Townsend)	100	100	.05	..	..	..	..	..	Fair	0
Minn. (F. W. Ray)	125	120	.04¾	..	.35	..	.45	..	Rapid	0
Minn. (B. L. Morehouse)	80	80	..	..	.45	..	.55	..	Fair	0
Nebr. (J. H. Wagner)	66⅔	75	..	..	.50	2.40	.60	.12	Slow	0
Nev. (G. G. Schweis)	0	0	..	..	..	..	..	..	..	0
N. Y. (Adams & Myers)	50	75	..	..	.45	3.00	.65	.20	Fair	..
N. Y. (Geo. B. Howe)	..	50	..	..	..	..	.50	.15	Fair	10
N. Y. (F. W. Lesser)	50	50	..	..	.40	..	.50	..	Fair	3
N. Y. (N. L. Stevens)	60	75	..	..	..	..	..	..	..	2
N. C. (C. S. Baumgarner)	100	100	..	..	..	..	.50	..	Slow	0
N. C. (W. J. Martin)	160	100	.05	..	.55	..	.75	.20	Slow	0
N. D. (Chas. Engle)	50	75	..	..	.35	2.75	.45	.15	Slow	0
Ohio. (F. Leininger)	50	50	.05½	..	..	..	..	..	Fair	0
Ohio. (J. F. Moore)	10	15	..	..	.45	..	.65	..	Slow	0
Ohio. (R. D. Hiatt)	100	100	..	..	.50	3.60	.65	.20	Slow	0
Okla. (C. F. Stiles)	70	40	..	..	.50	..	.65	.15	Slow	0
Pa. (Harry Beaver)	1	50	..	..	..	..	.50	..	Slow	5
Pa. (D. C. Gilham)	60	..	..	..	.68	4.00	.90	.25	Slow	7
S. D. (L. A. Syverud)	65	40	..	..	.30	2.20	.40	.15	Slow	0
Tenn. (J. M. Buchanan)	90	100	..	..	..	..	.75	.20	Fair	0
Texas. (T. A. Bowden)	25	25	..	..	.42½	..	.50	..	Slow	0
Texas. (J. N. Mayes)	25	25	..	..	..	..	..	..	Rapid	0
Texas. (H. B. Parks)	33	66	.03½	..	.27	..	.35	..	Fair	10
Utah. (M. A. Gill)	20	40	.05	..	.32½	..	.40	..	Fair	0
Vt. (Phillip Crane)	40	..	..	..	..	..	..	..	Slow	10
Va. (T. C. Asher)	60	60	..	..	.50	2.64	.70	.15	Fair	0
Wash. (W. L. Cox)	50	100	.05	..	..	..	.40	..	Fair	0
Wash. (G. W. B. Saxton)	100	100	..	..	.37½	..	.40	..	Fair	0
W. Va. (W. C. Griffith)	40	25	..	..	.25	2.00	.35	.10	Slow	60
Wyo. (Earl C. Reed)	50	75	..	..	.32	2.40	.40	.15	Fair	0

To New York State Beekeepers

HONEY CONTAINERS

A WORD TO THE WISE

You should anticipate your requirements on honey containers as early as possible. Prices are almost sure to advance as the price of all raw materials has been increased.

We now have a good stock of cans, pails, and jars, and our prices will remain the same as long as this stock lasts. After it is gone, we don't know what prices will be.

Write for complete price list of all honey containers and get your order in at once.

A. I. Root Company of Syracuse
Midland Ave. and Tallman St.
SYRACUSE, N. Y.

Serves You Best

PATENTS Pat. Counsel of The A. I. Root Co. Practice in Pat. Off. & Court.
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Munsey Bldg., 1329 E St. Washington, D. C.

RED STICK
PACKAGES & NUCLEI

25 CENTS
One or One Hundred
BY RETURN MAIL

Low prices, large apiaries, responsibility.
RED STICK APIARIES
P. O., Montegut, La. Tel., Houma, La.

HONEY CONTAINERS

2½-lb. cans, per carton of 100	$3.50
5-lb. pails, per carton of 50	2.90
5-lb. pails, per carton of 100	5.75
10-lb. pails, per carton of 50	4.40
10-lb. pails, per 100	8.75
5-gal. square cans, 2 in a case, per cs.	.95
5-gal. sq. cans, 2 in a case, 50 or more	.90

Write for prices on larger quantities.
Offered for shipment either from Reedsville, Wisconsin, or Maywood, Illinois.

½-lb. glass jars, per case of 24	.70
1-lb. glass jars, per case of 24	.90
2-lb. glass jars, per case of 12	.65

SHIPPING CASES

Single Tier—Clear Basswood, Glass Fronts

For 12 sections, 4¼x4¼x1⅞", per 10	2.00
For 24 sections 4¼x4¼x1½", per 10	2.30
For 24 sections, 4x5x1⅜", per 10	2.30
For 24 sections, 4¼x4¼x1⅞", per 10	2.50

Double Tier

For 24 sections, 4¼x4¼x1⅞", per 10	2.65

CORRUGATED PAPER SHIPPING CASES

For 24 sections, 4¼x4¼x1⅞", per 10	1.65
For 24 sections, 4¼x4¼x1½", per 10	1.50
For 24 sections, 4x5x1⅜", per 10	1.50

All the above subject to change in price without notice.

A. H. Rusch & Son Co.
REEDSVILLE, WISCONSIN

—DEALERS— ATTENTION

We have a special proposition of interest to all dealers or to all beekeepers who wish to become dealers of Beekeepers' Supplies. Write for information. All goods are GUARANTEED SATISFACTORY

falcon Quality Products

W. T. Falconer Mfg. Company
Falconer, New York

Wanted Amber Extracted Honey
Send Samples and best price Frt. Paid to Cincinnati, O.
THE FRED. W. MUTH CO.

Lower Prices!
Prompt Service!

When combined with **QUALITY** are just what you have been looking for in

HONEY CONTAINERS

2½-lb. cans, per reship. case of 24	$0.90
2½-lb. cans, per carton of 100	3.10
5-lb. pails, per reship. case of 12	.80
5-lb. pails, per carton of 50	2.65
5-lb. pails, per carton of 100	5.25
10-lb. pails, per reship. case of 6	.65
10-lb. pails, per carton of 50	3.85
60-lb. cans, per case of 2 cans	.85
60-lb. cans, in bulk, each	.30
24-oz. round glass jars, per cs. of 12	.60
16-oz. round glass jars, per cs. of 24	.95
8-oz. round glass jars, per cs. of 24	.70

F. O. B., Boyd, Wisconsin

Write for price list on comb-honey wrappers and shipping cases

August Lotz Co., Boyd, Wisconsin

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CHICAGO

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HARVEST TIME

for our beekeeper friends.

We are prepared with abundant supplies, bought and priced right, of the things you need, the best, too.

Extractors, large or small, tanks, strainers, knives, friction-top pails and cans, screw-cap cans, 5, 1, ½ and ¼ gallon; glass jars, 16 kinds and sizes; cartons, window and plain; wrappers, decorated and plain; shipping cases,, wood or paper; labels, paste, gummed tape.

Write for general catalog, label catalog, container price list.

A. I. Root Co. of Chicago
224 West Huron Street
CHICAGO, ILL.

LET'S GET READY

for that big year of 1934, which is on the way now.
Requeen with the best Italian Queens

ONLY 30c EACH

YOUR SUCCESS depends entirely on your queens.
Do you want us to rear them for you **CHEAPER, OR BETTER?**

BARGAINS IN BEE SUPPLIES

While they last.

Hoffman Frames .....$2.50 per 100
Modified Dadant Extracting Frames, $2.35 per 100

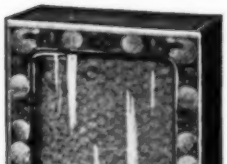
Send for large catalog.
Let us quote you on your requirements.

Send in your donation to the American Honey Institute today.
They need both the money and your word of encouragement.

The Stover Apiaries, Tibbee Station, Miss.

ECONOMY HONEY PACKAGES

Wrappers and Cartons



REVELATION COMB HONEY WRAPPERS

Attractive colors put "pep" back into the sale of comb honey. Individual dustproof wrappers.

FLAT WRAPPERS—Printed in two colors.

	100	500
For 4¼x4¼ section, blue and white	$0.75	$3.65
For 4x5 section, blue and white	.75	3.65
For Peewee section, blue and white	.50	
For 4¼x4¼ section (not printed)	.50	2.15

BAG WRAPPERS—Printed two colors—blue and white. 4¼x4¼x1⅞ size only: 100, 85c; 500, $3.65.

BAG FILLING DEVICE—Weight 2 lbs., each, 50c.

WINDOW CARTONS—Extra large opening to display honey fully.

For 4¼x1⅞, with cellophane front 100, $1.00 500, $4.25 1000, $8.25

COMB HONEY CARTONS—Printed white and orange on blue background (no window). 100, 75c; 1000, $6.50. Name and address extra: 100, $1.45; 1000, $3.00. Made for 4¼x1⅞, 4¼x1½ and 4 x 5.

STANDARD FLUTED JARS FOR HONEY

Clear flint glass, tight caps, wax liners, four sizes—32-oz., 16-oz., 8-oz. and individual. Prices as follows:

3½-oz. jars in cartons of 24 (wt. 7 lbs.)	$.45
½-lb. jars in cartons of 24 (wt. 12 lbs.)	.60
1-lb. jars in cartons of 12 (wt. 12 lbs.)	.45
1-lb. jars in cartons of 24 (wt. 22 lbs.)	.80
2-lb. jars in cartons of 12 (wt. 17 lbs.)	.60

E. Z. CARRY JAR—QUART SIZE

With bail for carrying. Price—Corrugated cases, 1 doz. each, per case, 85c; wt. 20 lbs.

PLAIN FRICTION TOP CANS AND PAILS

A quality product made to give you service. Heavy tin tested under pressure, tight lids, non pull-out bail.

F. O. B. Hamilton, Ill., or Keokuk, Iowa. Packed in dustproof cartons. Mailing wt.

	10 cans	10	50	100	wt. 100.
2½-lb cans	6 lbs.	$.45		$3.10	31 lbs.
5-lb. pails	8 lbs.	.75	$2.65	$5.30	54 lbs.
10-lb. pails	12 lbs.	1.00	3.85	7.70	90 lbs.

60-lb. cans, 2 per case, $1.00 per case; 10-case lots or more, 95c per case.

PLAIN FRICTION TOP CANS AND PAILS

F. O. B. Chicago, Ill., or St. Louis, Mo.

In lots of not less than 1000 cans.

	Wt. per 1000.	Price per 100.
2½-lb. cans	310 lbs	$2.80
5-lb. pails	540 lbs.	5.00
10-lb. pails	900 lbs.	7.20
60-lb. cans, 2 per case	800 lbs.	.87
60-lb. cans, 50 per crt.		13.60

CORRUGATED COMB-HONEY SHIPPING CASES

Heavy corrugated board with partitons, including gummed tape, printed in red and green.

Prices on Corrugated Cases for 24 4¼x1⅞ or 4x5 sections.

Price of 5	$.90 Mailing wt. 15 lbs.
Price of 10	1.70 Mailing wt. 30 lbs.
Price of 100	16.00

Get our fall price list. Your copy free. Write today. This lists 5-gallon cans and reshipping cases, wood shipping cases, sample mailing cases, extracting equipment, honey selling helps, labels. If you need labels, send for special label catalog.

Dadant & Sons, Hamilton, Illinois

Gleanings in Bee Culture
AUGUST, 1933

Government Honey Market Report

Thanks to the many readers of this journal who protested to the Department of Agriculture, and in many cases to their congressmen, against the discontinuance of honey market reports, the government has reconsidered the matter and has decided to continue these reports in a shortened form.

Crop and Market Conditions

Unless adequate rains occur throughout large areas in the United States to revive the honey plants, the honey crop for the country as a whole will be shorter than for many years. While good crops have been secured in many localities, conditions are extremely spotted with good yields the exception. The short crop, together with advancing prices in other commodities, the smaller-than-usual holdover, and the many new outlets for honey, should result in better prices. Just how much prices can be increased without stifling the demand remains to be seen.

The American Honey Institute and Its Opportunities

There never was a time in the history of this organization when it had so many requests for information on honey or a greater opportunity to serve beekeepers than right now. The Electric Refrigeration Department of the General Electric Company has offered the Institute the free use of one of its diet kitchens to demonstrate honey and its uses at the Century of Progress Fair at Chicago. Regretfully we have had to turn this down for the want of funds to cover transportation and other expenses. More than a thousand doctors have registered for special literature on honey. More than five hundred home economic specialists are waiting for material on the uses of honey and suggestions for National Honey Week.

All this in addition to the ever-increasing number of requests from consumers—five times as great as three years ago—causes an increased postage expense, to say nothing of the time of the two girls in getting the right material to the right people. In spite of cuts in salaries, they manage to keep going on a budget at just half that allowed three years ago. They are so in love with the work and see such opportunities to help beekeepers find a market for their honey that they plunge uncomplainingly into the job.

Shall we beekeepers, the direct beneficiaries of this work, allow it to lapse for want of funds? The manufacturers and the allied industries have felt the pinch of these hard times the same as beekeepers. They have given liberally. Every poor season like this hurts them as well as the beekeepers.

The question boiled down, is whether we shall let the Institute die when it is doing its best work and lose the good will and momentum accumulated during the years it has been inexistence.

Shall we let the thousand doctors who have asked for material on honey go unsupplied or shall we say by our dollars, "the Institute shall not die"? Shall we pass up the wonderful opportunity offered by the General Electric Company?

You can save the day if you, one and all, will send $1.00 to the American Honey Institute, 417 North Few Street, Madison, Wisconsin. Do this whether you have contributed previously or not.—E. R. Root.

Supplying Local Market When the Crop Is Short

Many local markets will go without an adequate supply of honey this season unless the beekeepers who have been supplying these markets are alert enough to supply them with honey purchased from other localities. The abundance of honey last season in many of these localities together with the low price and the aggressive marketing, has created a good demand for honey. To allow this demand to go unsupplied when the local honey crop is short is one of the worst things the beekeeper can do so far as his local market is concerned. Many hesitate to purchase honey to supply their local customers on

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account of the difference in flavor of honey from other localities, but this can usually be overcome by careful blending. It is usually possible to make up a blend of honeys from other localities whose color and flavor are almost identical with that of the local honey. Beekeepers who have built up a good local market can not afford to lose it by failing to provide a continuous supply from other sources when they do not have enough honey of their own.

Proposed New Pure Food Law

As mentioned on the "Just News" page of the July issue of this journal, a bill was recently introduced in both the Senate and the House of Representatives which, if enacted into law, will supersede the present Pure Food Law. Nearly 27 years' experience in its enforcement has revealed several weaknesses in the law. Certain groups, such as the corn-sugar interests, have maneuvered affairs to their advantage, as in the ruling by former Secretary of Agriculture Hyde, which would legalize the adulteration of certain food products with corn sugar. Situations impossible to foresee when the present Pure Food Law was drafted make it necessary that radical changes be made if the public and the honest manufacturer are to be protected.

The new bill was prepared by the officers of the Department of Agriculture in charge of the enforcement of the Pure Food Law and has been approved by the Department of Justice. It is carefully prepared to retain all the good features of the present law but strengthened to prevent the many ways of evasion which have been discovered since 1906 when the present law was enacted. It is broadened to bring cosmetics within its scope, as well as mechanical devices intended for curative purposes; it gives the pure food officials power to prohibit false or misleading advertising of foods, drugs, and cosmetics; requires definitely informative labels; prohibits added poisons in foods or the establishment of safe tolerances for such poisons; prescribes more severe penalties to prevent chronic offenders from regarding the small fines heretofore imposed as merely a tax on a profitable illegitimate business, and other important features.

Beekeepers will be especially interested in the more informative labels which it requires, for honey is one of the products of which the producer is justly proud and which he is not anxious to palm off as something else as the corn-sugar people are so anxious to do with their product. No doubt the food adulterators and dishonest manufacturers will put up a bitter fight against this bill which is intended to protect the public and the honest manufacturer. This journal will attempt to keep its readers informed as to its progress through the legislative machinery at Washington.

Another Swarmless Season

It does not often happen in the East that there are two consecutive seasons without swarming, but this has been the case in much of the clover region last year and this. During both seasons, well-managed colonies built up to enormous strength previous to the beginning of the white-clover and alsike-clover bloom, then the weather was favorable for field work practically every day during the honey flow. The great preponderance of field workers over the younger bees (hive workers) during the short honey flow this season, together with the fact that the honey plants apparently yielded nectar quite early in the morning, resulted in the hives having the appearance of being almost depleted of bees during the day, so there was no congestion of bees within the hive.

Even during the heat wave in June, the colonies apparently were able to keep comfortable because most of the bees were in the field during the day and the field workers clustered outside the hive at night to a large extent. Early in the morning, these great clusters disappeared when the work of the day was begun. Basswood came into bloom several days earlier than usual and began yielding before the clover ceased. During the short basswood honey flow, the field workers left their hives before sunrise and worked until long after the sun had set, so there was no danger of congestion within the hive during that period. Thus eastern beekeepers have experienced conditions as to swarming somewhat comparable to those existing in the irrigated region of the arid West where swarming is seldom troublesome, or at least would not be considered so by eastern beekeepers.

As mentioned in previous issues, the Editor again arranged most of his colo-

nies to bring about forced supersedure of queens in May, but there were so many failures of young queens apparently lost during their mating flight that there were plenty of check colonies. None of these attempted to swarm even though operated for comb honey. In some localities there was no swarming for another reason, namely, that of almost a total lack of nectar and near starvation during the normal swarming season. It thus happens that large areas of the clover region have had fewer swarms this season than for many years.

Strong Colonies at the Right Time

As a result of the untimely heat wave and drouth in June, the honey flow from alsike clover and white clover was extremely short in duration. In many cases, it lasted only a week. In spite of this, colonies that were in prime condition at the beginning of this short honey flow gave a good account of themselves in most cases, many having stored 50 to 100 pounds. On the other hand, colonies that were behind in building up not only produced no surplus honey but many failed to store enough to carry them through until a possible fall honey flow. This marked contrast is certainly an object lesson on the advantages of management that will result in the colonies being in prime condition at the very beginning of the main honey flow and kept so until its close. During a long honey flow, the difference is less noticeable since the laggards have plenty of time to reach their peak of strength and still fill several supers. Colonies that are rearing brood quite extensively and whose population at the beginning of the honey flow is largely recently-emerged bees, may miss the harvest entirely when the honey flow is short.

Making the Best of a Poor Season

A failure of the honey crop, such as has been experienced in many localities this season, especially in portions of the clover belt, brings with it some rather difficult problems in the management of the colonies. By no means the least of the difficulties to be overcome is that of the discouragement of the beekeeper, which often causes him to neglect the bees which in turn results in the colonies being in poor condition for winter. Many who are in the marginal class of beekeepers and whose localities have failed to be kind to the bees this season, will lose some if not most of their colonies through neglect. It often happens that the best seasons follow a season of failure. Therefore, those who become discouraged and neglect their colonies during poor seasons are usually poorest prepared to harvest a bumper crop when the opportunity comes.

In many cases beekeepers are inclined to take away as much honey as possible, leaving the bees to shift for themselves during late summer and fall. This may work out all right provided there is a good fall honey flow to keep up breeding and supply enough nectar for winter stores. But in some localities, such a procedure will result in either actual starvation or colonies in a greatly weakened condition and not at all prepared for winter. When the honey crop is short, the real beekeeper (unless he depends upon package bees) will make sure that the bees are amply provided with honey, whether any surplus is taken or not.

In localities where there is no dependable fall honey flow, it is often advisable to place any partly-filled supers above the second story (food chamber) to induce the bees to move the unsealed honey from the partly filled supers into this second story instead of extracting this unfinished and often poorly-ripened honey. In the case of comb honey, it is usually advisable to take off the supers even though the bees may still be storing honey in them slowly, in order to crowd the late honey into the brood-chamber or the food-chamber. In this way, it should be possible in most cases to have the colonies well supplied with honey, even though the season has been a failure.

In addition to having the second story well provisioned with honey, if all old or otherwise inferior queens are replaced with young vigorous queens now, the colonies should be in good condition for winter so far as strength in young bees is concerned.

In some cases, beekeepers will no doubt be inclined to kill their colonies at the close of the honey flow and store the combs partly filled with honey until next spring, then install package bees at the proper time. This method often works out well in the extreme northern portion of the United States and in portions of Canada where the main honey flow occurs relatively late, but does not work so well farther south.

Migratory Beekeeping

Frank Wells

Conditions Under Which It Pays to Move Bees to Additional Nectar Sources

While migratory beekeeping is largely confined to the western portion of the United States, it is on the increase in other sections of the country as well. This increase is due primarily to the growing realization among certain types of men that beekeeping is not only a means of livelihood, but a source of intellectual satisfaction — a profoundly gratifying way of life. Often taken up as a hobby or secondary source of income it quickly captures their entire attention and forces them to abandon more prosaic pursuits.

When such men find themselves unable to make beekeeping profitable in the part of the country in which they live, rather than give it up for something less stimulating, they seek the most logical and direct solution to their problem possible under the prevailing circumstances. They take their bees to the nearest point at which a substantial honey crop can be gathered at a time that does not conflict with the main honey flow in the home territory.

Single Source Not Sufficient Unless Yield Is Long

This was the condition that confronted Mr. Clarence Thompson and his brother Kyle of Surry County, North Carolina, a little over four years ago. Situated at the foot of the Blue Ridge in the heart of the sourwood region, the Thompsons began with fifty colonies as an adjunct to their general farm activities. They enjoyed an exceptional yield the first year, and from the very beginning both men became tremendously interested in the work. But owing to the limited nature of the sourwood honey flow, and the relative scarcity of other honey plants in their immediate section, they soon realized that another source must be found if they were to continue in the business. Investigation pointed toward eastern North Carolina as the logical place for them to try.

The following year they increased the number of colonies to 150 by the purchase of colonies and three-pound nuclei. They then bought a ton and a half long wheel-base truck, loaded on about a third of their colonies, and on February 15 started for Pender County, located in the eastern seaboard, a distance of some 275 miles. A second trip followed.

When they left the mountains, the bees were still semi-dormant, but by the time they had reached the warmer coastal region, they had become active and were soon engaged in intensive brood-rearing.

Thompson Brothers' apiary at the base of the Blue Ridge Mountains, where sourwood is present in abundance. The picture was taken at the end of the honey flow.

By the beginning of the main honey flow near the middle of April, the majority of the colonies were strong and ready for work. A few weaker ones were strengthened by the introduction of package bees.

Harvesting Two Crops During Same Season

In eastern North Carolina the honey flow is long, generally about 40 days. By June 10, the Thompsons' bees had gathered between 200 and 250 pounds per colony. There was some holly, huckleberry, gum, high and low bush gallberry and sinkberry-holly being the chief and most desirable variety.

And then the real work began. Only about 4000 pounds of honey could be hauled at a trip. At present with their increased number of colonies, five and sometimes six loads are required to transport the honey alone from eastern Carolina to the mountains. When the honey is all in, 55 colonies are loaded for the return trip. For this exceedingly difficult and hazardous undertaking an empty super is placed on each colony and covered with a fine screen wire to ensure sufficient air and ventilation. Toward evening the 275-mile trip is begun and on the following morning with good luck they are home again at the base of the Blue Ridge. Three such trips are now required to get the bees all back home each year.

On their first return from the coast, the Thompsons realized that they had missed virtually the whole of the poplar, persimmon, and locust honey flows at home. They then planned to leave about half of their colonies at home the following year to take care of this defect. Sourwood, the only remaining crop, is a rather short one —usually about three weeks—but if there is anything like a normal honey flow the average per colony yield is generally good —75 to 100 pounds.

In the meantime their business has increased each year until at present there are approximately 250 colonies. One of the brothers now makes three trips annually to the eastern seaboard carrying 55 colonies at each load. The other remains at home and looks after the remaining colonies left there for the local honey flow as well as attending to the marketing of their crop.

Building Up Sales Outlet for Increased Production

The development of the sales angle of their venture is every bit as interesting as the production. At first a sign in large letters was placed on the lawn in front of the home to let motorists know that they had honey for sale. This was fairly satisfactory, but it soon became apparent that a roadside stand would increase business and facilitate the more rapid movement of their product.

Soon a neat, well-constructed house, eight by ten feet in size was built on one

One of Thompson Brothers' apiaries in full swing for the sourwood honey flow.

Sourwood tree in full bloom.

side of the lawn far enough back from the highway to insure ample parking space for customers. Window space was provided across the end next to the road and part of the way on each side of the building to give light and allow for handsome display of products. Shelves were constructed within on which were arranged supplies. At one side a model hive was set to further attract the attention of travelers. Everything about the market was painted white. A legend in large letters "Eat Honey—We Sell Nature's Own Sweets," was placed on each side of the building facing approaching motorists.

Both extracted and comb honey are put up in neat containers and exhibited in the three show windows. Attractive labels bearing the producers' names, guarantee, net weight, and variety of product are placed on each container. The packages range in size from half pint jars to 60-pound tins.

The sourwood honey with its mild flavor and light, clear color is by far the most popular variety, bringing almost double the price of other kinds. Those who buy it almost invariably come again for more and also recommend it to their friends. A large mail order trade has thus sprung up which materially aids toward the disposal of their crop.

Making Increase at Little Expense

This year the Thompsons plan to make an increase in a manner they have never before undertaken on a large scale. They propose to shake enough bees out of 100 colonies to form an additional 50, dividing the brood between the old and new colonies, and thus bringing the number of their colonies up to approximately 300. They estimate that this is about the maximum number possible for their particular type of migratory beekeeping without running afoul of the law of diminishing returns.

Thus the Thompsons have achieved success in an undertaking entered into merely as a supplement to farm income.

Yadkinville, N. C.

Honey Sensitization

W. Ray Jones, M. D.

Why Honey Does Not Agree With Some People, and a Simple Remedy

The most common ill effects from eating honey, disregarding those of simple gluttony, are cramps, heartburn, gastric indigestion, and indefinite general discomforts immediately following partaking. These unfortunate individuals are afflicted with what is known as honey sensitization, or honey allergy.

A sensitive or sensitized person is one who is adversely affected by very small quantities of nitrogen-containing substances which do not so affect other individuals. Allergy is a broad term covering sensitization in all of its manifestations. Commonly recognized allergies are: pollens causing hay fever, and various dusts or animal emanations inducing asthmatic attacks. Foods are allergic to some persons and when injected cause similar local conditions in the alimentary canal.

Babies are much more susceptible to food allergies than grown-ups. This must be remembered in modifying baby's milk with honey.

Ingredient Which Causes the Distress

Sensitiveness to honey is one of the least common of food allergies. Eggs, for instance, affect hundreds to one adversely affected by honey. The exact reason for honey being abnormally irritating to some is much disputed. Some claim that it is because of the few suspended pollen grains or because of extractives from the pollen coming in contact with the honey while in the comb or in the extraction process. Others claim that the sensitization cause is the aroma incorporated in the honey as a most essential part of the flavor. All agree that it is not the carbohydrate elements.

Occasionally the offender is the comb and not the honey at all. I personally encountered one such case, a person who could eat extracted honey but not comb honey. Also I encountered one person sensitive to Illinois honey but who could eat Puget Sound honey with impunity.

Influence of Heredity

The tendency to become food sensitive is hereditary. The substance causing illness may vary among different members of the family. One family tree showed a child sensitive to mutton, in other words, mutton always made him sick. The father was sensitive to nuts, particularly walnuts. He like walnuts but they made his tongue sore and caused intestinal indigestion. The grandmother liked honey, but it caused gastric cramps and acute indigestion. The great grandfather was sensitive to mutton. Here were two generations not sensitive to mutton but sensitive to other foodstuffs between the two mutton-sensitive individuals. Only one member of the entire family tree was honey sensitive.

Just why should this grandmother be unable to take honey? Why she should have such severe cramps and acute indigestion when eating honey was a great problem until food allergy was learned of, and that family tree studied. All individuals of the family were of long life and healthy in all ways except for a marked tendency to digestive disturbances. This was usually limited to certain foods. Seemingly no two had the same dislikes. That merely showed that the tendency to become food reactive was hereditary. Special sensitizations are not hereditary. Among approximately forty individuals studied in this family, only one was honey sensitive.

Some honeys are naturally disagreeable to all persons. This is because of the plants furnishing the nectar. I once obtained a sample of dark, bitterish, supposedly-cascara honey that had the laxative effect of cascara. Rhododendron honey is supposed to be generally toxic, although what I sampled as such was not. Both of these small trees grow abundantly in localities about the Puget Sound country. Some day there are going to be human ailments traced authentically to bad honey. That will be real undesirable publicity.

Even really terrible honey, however, is not disagreeable to all. A peddler made the rounds in Seattle selling what he called "wild honey," as something highly prized. It looked more like honey dew. He sold it at almost twice the price of fireweed honey. In a delicatessen I found good local honey selling at one-third the price of a "Guatamala honey." Judging from the demand for the generally undesirable honeys by some and the disagreeable effects the best of honey has upon others, one must be convinced that the reaction to honey is distinctly individualistic.

Sensitization is Really a Life Saver

Being sensitive to foods, animal emanations, dusts, etc., sounds like something is decidedly wrong in natural economy. It is not, but is one of the necessities for protection of life. It is this sensitization ability which enables the body to overcome disease. It is the body becoming sensitized to bacterial poisons that causes the fever and initials the development of antitoxins and immunity. Those deficient in ability to become sensitized often become carriers and chronic sufferers. You have all heard of diptheria carriers and of typhoid carriers who, while carrying the germs, are not ill themselves. Were they sensitized they would react and throw off the infection.

The Remedy

The ordinary remedy for food sensitization is to leave that food alone for a time, hoping that the sensitiveness will wear off. Quite commonly it does. I suggest that a honey sensitive person leave honey alone for from two to six months, then try the extracted from some locality with an entirely different flora; if this causes no disagreeable symptoms, try honey in comb. It is a case of try a little at a time, one of trial and error. Foods including honey, like alcohol, affect no two exactly the same.

Seattle, Washington.

Lighting the Interior of Beehives

Dr. E. F. Phillips

Further Manifestations of the Desire Among Communists for Revolutionary Methods in Beekeeping

Lighting Interior of Beehives

A third "revolutionary" method which had had reverberations in this country and in every country of western Europe is the use of illuminated hives. This appears first to have been advocated in the Soviet Union by a beekeeper named Igoshin who has a small apiary in the borders of Moscow. His efforts created much interest on the part of Briuchenenko, one of the leading men in beekeeping in the Soviet Union, and Briuchenenko has described the use of glassed hives in journals in various other countries, including the United States. It was my good fortune to visit the Igoshin apiary, although the originator of the method was unfortunately absent. Two of the men who have worked with him were there to explain everything to me.

In the illuminated hives, glass is placed in the ends of the hive bodies, on the east and west hive ends only, and the frames run the "cold way," from east to west. Glass is not placed on the hive sides, as has been done by various American and German beekeepers who have thought the method worth testing. A small ventilator is placed above each piece of glass, or at least above that in the front of the hive. In some hives only the lower brood-chamber is illuminated, either in front or in the back, or both front and back. Some experiments have been tried of illuminating the front of the lowest super.

For this method, it is claimed by the originator that eight illuminated hives produced a total of 300 kilograms of honey, an average of 37.5 kg. (about 80 pounds), while eight non-illuminated hives produced 178.3 kg., an average of 22.3 kg. The brood in the illuminated hives filled 74 frames in August, while in the non-illuminated hives there were then 30 frames of brood. It is further claimed that the bees of the vicinity of Moscow which are normally cross become gentle as Caucasian bees in illuminated hives. They were far from gentle on May 7 when I visited the apiary. A thermometer is kept inside each colony behind the glass, and when the temperature inside gets to 36° C., the ventilators are opened. The glassed colonies are wintered in a cellar which is lighted by windows.

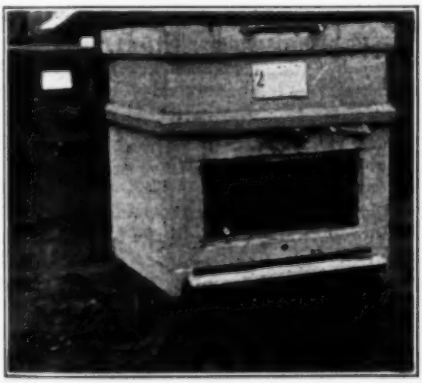
The acknowledged leadership of Briuchenenko and his wide publicity regarding illuminuated hives has resulted in glassed hives being made for trials in all parts of the world. I saw such hives, either as used by Igoshin or with modifications, at almost every German experimental station. I know of no sound evidence that the method has merit, but there is of course, no reason why it should not be tried if one wishes. When asked about the desirability of glassing all hives to be used in the Soviet Union, I was compelled to advise against it, until some evidence is forthcoming that it is profitable. If this revolutionary method should perchance turn out to be worth while, it will then be possible to insert glass. When glassed hives are used with Caucasian bees, the bees promptly plug the space between frames with propolis, thus cutting off the light. They did the same thing under similar conditions years ago in the apiary of the Bureau of Entomology, so I was not surprised at this report.

Search for Substitute Foods for Bees

In the desire to eliminate the ineffective practices of capitalistic countries, the beekeepers of the Union are desirious of obtaining some materials which will serve as a satisfactory food for bees, enabling them not only to live but to rear brood, so that they need not use honey for this purpose. They also recognize, as do beekeepers of other parts of the world, the desirability of obtaining materials which will serve as a satisfactory pollen substitute, thus relieving the bees of the necessity of wasting their time in pollen gathering and enabling the bees to go on with brood rearing without regard to the limitations of pollen in the vicinity.

If such materials could be found, their use would truly be revolutionary procedures, but the unfortunate fact is that the proper materials are still unknown. I was asked about the efficiency of all manner of carbohydrates as food for adult and

larval bees, and was fortunately able to give rather specific information, since I had worked on the problem of the utilization of carbohydrates by bees. It seemed a bit hard for the beekeepers to believe that bees are unable to digest certain common carbohydrates, and they seemed to think that if perhaps they could only domesticate the honeybee, they might induce the bee to learn to digest these materials. Unfortunately the digestive processes of the bee refuse to act properly on various things which outwardly resemble pollens, and it has been shown that various meals and flours are without value for stimulating brood-rearing in periods of pollen shortage. Beekeepers of the Soviet Union are by no means alone in their notion that these things are utilized by the bees, and it is hard to bring many beekeepers to a realization that the gathering of these materials does not imply

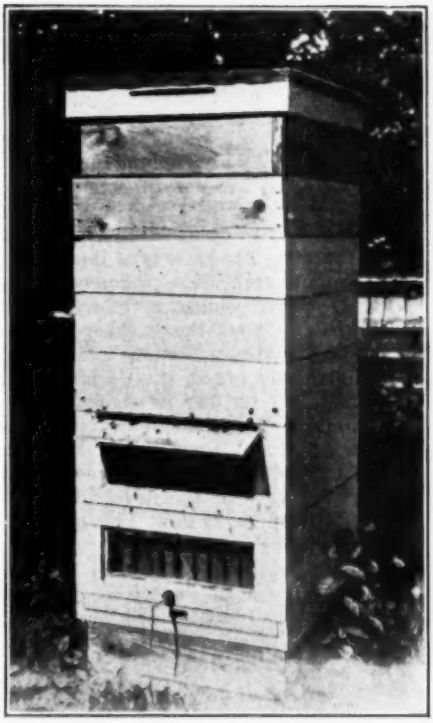


A glass hive in the Igoshin Apiary. The hive is as it was removed from the cellar.

their utilization. Even the great beekeeper Dzierzon was fooled by the fact that bees collect meals when they are available.

It is a fond dream of some few of the communistic beekeepers that they will be able to find a material which will serve as a substitute for honey in the diet of the honeybee, and another substitute for pollen. When the great day comes when these substitutes are found and methods are discovered for utilizing them in the hive, we shall obtain some big honey crops.

Another question asked me in several places was regarding the mineral requirements of adult and larval bees, the question being asked with the view to supply-



A glassed hive in the Igoshin Apiary during the summer arranged for illumination of the lower super.

ing the needed salts. There might, of course, be some advantage in rearing bees with the optimum mineral constituents, but when one considers the human labor involved in analyzing what the bees have and then of providing the deficiencies, the task looks rather impractical. For that matter, the same criticism may as well be applied to the use of pollen substitutes. If some substitute for honey could be found which is not more than half as expensive as honey, there might be some possibility of utilizing it so as to increase the honey surplus.

It will, of course, be understood that the rank and file of beekeepers of the Soviet Union manage bees along much the same lines as do beekeepers in all other parts of the world. Some of those visited appeared to be well qualified beekeepers, while others appeared to be spending too much time on non-essential details. It is a common practice to give the hives a good spring housecleaning in early April, and at that time to record the amount of brood and honey in each hive, as indicative of the strength of the colony. Similar rec-

ords are made at intervals through the year, these records being all transmitted to central offices, so that rather exact estimates of crop outlook may be made.

Stimulative Feeding

Being firm in my conviction that a good supply of food in spring is the prime requisite to colony strength at the time of the honey flow, the careful examination of colonies in early April in a region where snows may occur later, struck me as bad practice. The records of these early examinations often reveal a honey supply of five to seven pounds, a totally inadequate amount. This the beekeepers also recognize, and it is a common practice to give stimulative (or as the Germans call it, speculative) feeding in spring. In the beekeeping of the whole world, it would be difficult to find a practice worse than that of depending on minute amounts of food given daily for the development of colonies for the honey flow. This has been tried in America and is generally an abandoned practice, but is still used in some countries of western Europe. It is probably a curse through which beekeepers have passed almost everywhere that bees have been kept. There is nothing to commend spring feeding and untold evidences to condemn the practice, yet it persists. I spoke in no uncertain terms about the evils of this practice to the leaders of beekeeping in the Soviet Union. Speculative feeding can scarcely be considered as a strictly "revolutionary" practice, for it is too old in capitalistic countries. It is rather in harmony with the notion that the honeybee must be domesticated, but it is by no means a rarity in the handling of domestic animals to starve them.

Poor Wintering an Outstanding Weakness

Ordinarily wintering in the Soviet Union is practiced along much the same lines used in the northern United States, or rather methods are used which we are abandoning. Because of the extreme severity of the winters, outdoor wintering is considered impracticable, and a type of indoor wintering is in vogue. Instead, however, of constructing special underground repositories for the bees, it is rather common to use houses. Many of these are lighted by windows and no provision is made for artificial heating. During a Russian winter, such a house must become extremely cold, too cold for proper wintering of bees. It is well known in the United States that the wintering of bees in cold houses leads to deplorable results, and this is all the more true when the houses are not dark.

The condition of most colonies which I saw in May led me to conclude that the outstanding weak point in Russian beekeeping is wintering. Although not asked much about this problem, I insisted on discussing practical wintering in one of the lectures which I gave in Moscow. The trouble with giving a talk on wintering in either Moscow or America is that so few beekeepers are aware that their win-

The Igoshin Apiary, in which glassed hives were first used in the Soviet Union. Mr. Chodus is shown at the left.

tering methods are poor, for so few have ever seen good wintering and therefore have no basis for thinking about it. I did my best to bring the beekeepers of Russia to an appreciation of what can be done by well wintered colonies, adequately supplied with food for colony development, and whether or not I succeeded is just as uncertain as is my success when I have discussed the same problem in the same way nearer home.

Ithaca, New York.

Dry Seasons Cause Changes in Bee Pasture

E. R. Root

How They Are Forcing Farmers to Grow Sweet Clover and Alfalfa Instead of Shallow Rooting Plants

Jack Deyell and I were greatly puzzled as to where the honey came from after sweet clover, alsike and white clover were out of bloom last year at some of our more distant yards. One and two supers of nice white honey were stored when there was apparently nothing in sight except red clover and alfalfa.

We took a tramp over the fields in the vicinity of the yards. Yes, there were a few bees on red clover, but surely not enough to do much good. Then we went to the fields of alfalfa that were in bloom as the second cutting had not been made. There were almost no bees there, but occasionally we would find just one bee to an area of ten feet square. We gave that up. There was no aster or goldenrod anywhere.

We noted that the bees at all of the yards were awfully cross. They would come out and meet us when we got within a couple hundred feet of a yard. We had to put on our veils and stick our hands into our pockets because they were so vicious. When we got inside of the yards, my, oh, my! how they did sting our clothing!

Why the Bees Were Cross

I said to Jack that they acted as if they had been robbing. It didn't occur to either of us that they might have been working on something in the morning; that when we were there well on in the afternoon the supply of nectar had been exhausted. No, we came back home, leaning to the opinion that the honey was coming from red clover.

We went back some two weeks later. The bees in the meantime had stored one and two supers more of honey and still were cross. There were no pasture fields of sweet clover. There was red clover but still the bees were not working it. There was lots of alfalfa but no bees to speak of on it. Again it did not occur to us that the alfalfa might be yielding nectar in the morning as does buckwheat, then letting up during the middle hours of the day. It did not occur to us that the very condition that makes bees cross during a

Mr. R. J. Porter was first inclined to believe that his extra supers of honey was from red clover but he now thinks that it was from alfalfa before the second cutting.

buckwheat honey flow (no nectar in the afternoon) would make bees cross when alfalfa yields only in the morning. It should be remembered that our visits to the fields of alfalfa were always in the afternoon.

Chas. A. Reese to the Rescue

I was telling Mr. Reese, the Ohio State Bee Inspector, of our conundrum. He began to smile and then said:

"Your bees were working on alfalfa in the morning when you were not there to see them at work. That explains why the bees were so cross when the nectar supply in the blossoms was exhausted." Then he added that his official duties required him to travel all over the state and that he had what he thought was ample evidence that the bees worked on alfalfa in the mornings last season and were cross when they could get no nectar in the afternoon. He emphasized that bees would not work on alfalfa unless the field was five years old or old enough so that the roots were long enough to reach down into the wet subsoil. He further said that the variety should be Grimm, the one that will stand the winters.

I noted last season that in spite of the drouth, the fields of alfalfa were always a bright green all over the country while all other pasture crops except sweet clover were brown.

I had a talk a few days ago with Mr. Fred Leininger and Mr. R. J. Porter, his brother-in-law. Both admitted it was quite probable that their late honey flow was from alfalfa. One of the accompanying illustrations shows that Porter must have gotten something besides sweet clover. Last summer Mr. Porter believed that his bees were working on some yellow flower that was then in bloom, but some of us looked over his bee range and did not see any bees on it.

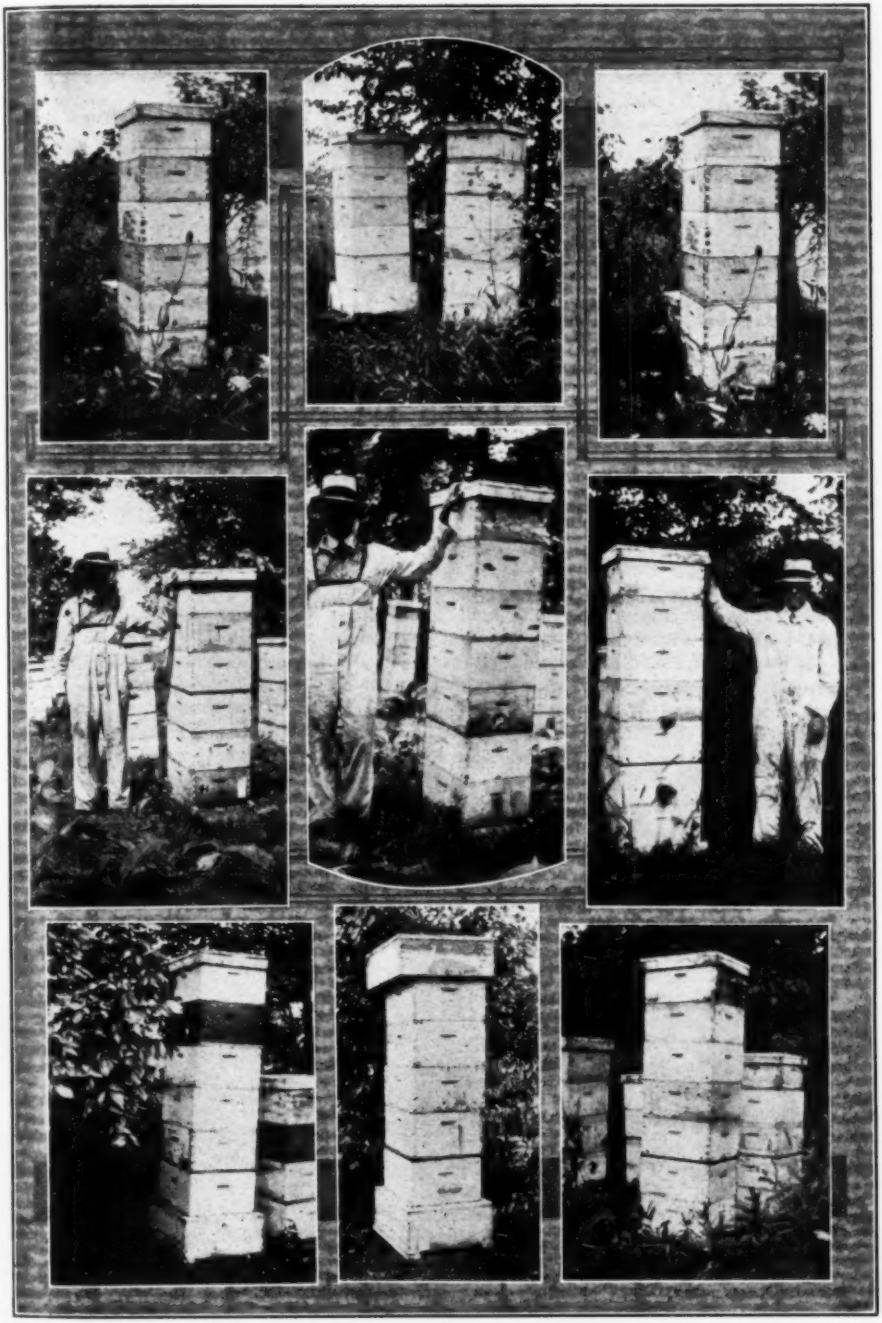
Another Silver Lining for Beekeepers in the East

If Mr. Reese has offered the correct explanation, that is, if alfalfa will come to the rescue of beekeepers during dry seasons in the East, when the old reliables like alsike and white clover fail on account of drouth, then we shall come to a new era in beekeeping. The lessons of three or four years of drouth all over the country are forcing farmers to put in legumes the roots of which will reach into the moist subsoil. The two plants that will do the trick are, of course, sweet clover and alfalfa.

Sweet Clover Prepares Soil for Alfalfa

But it is hard to get a catch of alfalfa. The obvious way is to put in sweet clover first, then alfalfa. That is precisely what is being done all over the East, particularly in New York, Pennsylvania, Ohio, Indiana, Michigan, Illinois, Wisconsin, Minnesota, and Iowa. Illinois, for example, had nearly a million acres of sweet

Mr. Fred Leininger's home yard as it appeared in 1932. Mr. Leininger, though not sure of its source, thought that some of his crop might have come from alfalfa after sweet clover bloom.



Some effects of alfalfa. Apparently in some cases two or more supers of honey were stored from alfalfa after the sweet-clover honey flow was over. Red clover may have helped to some extent.

clover last year. This is being followed with alfalfa in many cases It is a well-settled fact that portions of Michigan and New York have been producing honey from alfalfa for some time. Now it begins to look as if Ohio would fall into line, and why not? I shall be glad to get reports from beekeepers in the East where alfalfa is grown. Does it yield only in the morning, and are the bees cross in the afternoon?

I can't help noting how we humans are like our bees. When times are good and we are busy raking in the dollars, we are good natured; but when things go wrong, we are inclined to be cross, blame everyone else, and if, like the bees, we could take it out of the hide of the other fellow, we would do it.

Here is hoping that the silver lining has come in reality so we shall not have to blame the President, the Governor or the banks.

Medina, Ohio.

Plant Poisoning of Brood of Bees[1]

C. E. Burnside
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R. E. Foster
Apiary Inspector, State Plant Board, Gainesville, Florida.

Tracing Down the Cause of Heavy Loss of Colonies in Western Florida

During the spring of 1932 a temporary laboratory supported co-operatively by the United States Department of Agriculture and the states of Georgia and Florida was established at Thomasville, Ga., for the purpose of investigating a disease of the brood of bees which had caused extensive losses in some sections of southern Georgia and northern Florida. While the writers and A. B. Hamlin, state apiary inspector of Georgia, were studying this disease, another serious disturbance of bees was observed in western Florida which was different from any of the known brood diseases. This condition was characterized by death of larvae, pupae, and recently emerged bees, resulting in the weakening or entire loss of affected colonies. Where the trouble occurred, all the colonies in an apiary were affected to about the same extent.

Reports from Florida beekeepers and observations by the junior writer indicate that this disturbance has existed continuously for at least three years and has killed more than 50 per cent of the colonies in many apiaries in Madison, Taylor, and Jefferson counties. One beekeeper reported that, out of the 302 colonies in his apiaries in the spring of 1932, only 66 were alive in August and that more than half of these were affected beyond hope of recovery. Another beekeeper, having nearly 50 colonies in the spring, lost all but 15 during the following summer.

The disorder has frequently been confused by beekeepers with one or another of the brood diseases, and heretofore no successful method of control has been devised. Although the investigation is incomplete, the observations and experiments reported in this paper seem sufficient to determine the cause of the death of the brood, to distinguish the brood remains from those of the brood diseases, and to determine a method by which loss of colonies may be reduced.

Symptoms of the Disturbance

When the disorder first appeared in a colony, few or no bacteria were present, although in advanced cases bacteria were abundant and evidences of decay were pronounced. Several apparently different bacterial species were isolated, but no one species was constantly present either in the same or in different colonies. This seemed to indicate that the bacteria were merely putrefactive and were not responsible for the trouble.

Worker and drone brood were affected to about the same degree, but there is some question as to how frequently queen larvae were affected. Death usually occurred during the larval period, but pupae and recently emerged bees died also. Many

1 The authors wish to express their appreciation to S. E. McClendon for permitting, for the prosecution of this investigation, the unrestricted use of his apiaries in southern Georgia and western Florida.

young bees died at the time of emergence, while others upon emerging appeared weak and nervous and occasionally a wing or leg was rudimentary or lacking. These recently emerged bees either crawled from the hive or were carried out by normal workers.

In larval remains the first noticeable symptom was loss of plumpness and dulling of the normal white color. In early cases, when decay was delayed or absent, the skin remained tough. A dark line crossed by narrower dark lines frequently appeared along the backs of recently dead larvae. The color deepened while the remains were drying, finally forming gray to gray-black scales. In advanced cases, when decay began at once and proceeded rapidly, the color and other symptoms of the remains varied widely, presumably because of the work of different kinds of putrefactive bacteria. (Fig. 1). Decayed remains were dull white, brown, black, yellow, or pink.

In early cases the dead brood was usually either eaten or removed from the cells by adult bees soon after death occurred. In advanced cases brood remains were allowed to accumulate in the cells until the brood combs were nearly filled.

At first the larval remains were slightly watery, becoming more watery, pasty, jelly-like, or ropy as decay increased. When decay was delayed, a sour odor resembling that of sour milk was frequently present in partially dried larval remains. When decay was rapid a variety of putrid odors were present. In white or gray remains an odor resembling that of roasted peanuts was detectable, while in other remains different intense putrid odors developed. A decided odor of hydrogen sulphide (rotten egg odor) was not uncommon. In badly affected apiaries the odor could be detected several rods away.

It was clearly evident that the trouble was not caused by spray poisoning, because no spraying with arsenicals was being done. Moreover, adult field bees were not injured, an indication that arsenicals were not being gathered. It was suspected, however, that a virus might be responsible.

Experimental Findings

A series of 38 experiments were conducted in an attempt to determine the cause of the trouble. Only the significant results of these experiments are given.

Attempts to transmit the disorder to healthy colonies by the following methods proved unsuccessful: (1) Placing combs of affected brood in healthy colo-

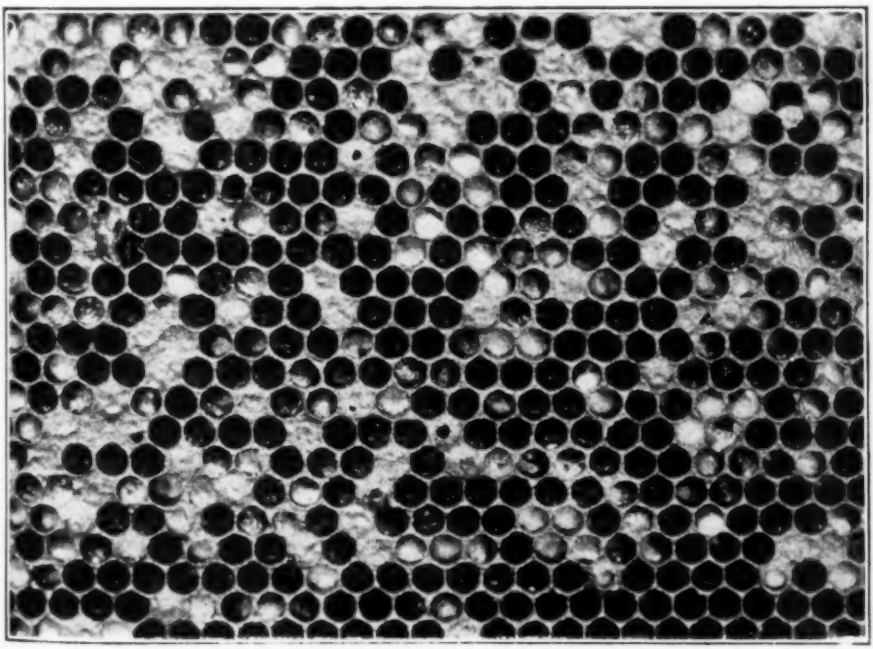


Fig. 1.—An advanced case of brood poisoning.

nies; (2) feeding macerated brood remains in dilute and in concentrated honey and in sugar syrup; (3) spraying water suspensions of brood remains onto the combs and bees; (4) giving combs of pollen taken from affected colonies to unaffected colonies.

The disorder was successfully produced, however, in the following ways: (1) By placing combs of healthy brood in affected colonies immediately after moving the colonies out of affected territory, together with honey recently gathered there; (2) by replacing combs of honey of healthy colonies with combs of honey from colonies with a large amount of dead brood; (3) by forcing healthy colonies to consume extracted honey from colonies with dead brood.

Out of ten colonies with sick and dead brood which were moved from affected to unaffected territory, nine recovered completely in from one to three months. The tenth colony contained considerable freshly gathered honey and was so badly affected at the time it was moved that it did not recover. Colonies with little or no freshly gathered honey recovered rapidly after being moved, whereas those with a considerable quantity of such honey stored in their combs recovered more slowly. Five or six colonies in an unaffected locality, in which the disorder was produced by feeding honey from sick colonies, soon recovered when the honey was taken away or consumed. The early termination of the experiment did not permit final observation to be made on the sixth colony, which still contained considerable sick and dead brood after two weeks. During the same period of time that colonies recovered in unaffected territory the disorder continued to grow worse in apiaries in affected territory.

Healthy colonies moved into an affected locality contracted the disorder within a week. After three weeks from one-quarter to one-half of the brood in these colonies was dead.

The results of these experiments indicate that the brood disorder encountered in western Florida was not a disease, but was caused by a substance in the stores poisonous to brood of bees. If a disease were responsible, it would necessarily be extremely infectious to be capable of spreading to all the colonies in affected apiaries and killing more than half the colonies in an extensive area during two or three seasons. On the contrary, every attempt to transmit the condition with sick and dead brood failed. It also seems likely, on account of the extent of the affected territory and the large number of colonies with poisoned brood, that the poisonous substance was gathered from one or more plants in the locality.

Comparison with Buckeye Poisoning in California

A comparison of this brood disturbance in western Florida with buckeye (Aesculus californica) poisoning of bees in central California is of much interest and seems to leave little doubt as to the similarity of the two cases. No attempt was made to extract and analyze the poisonous substance, however. The symptoms and effect upon the colonies are practically identical in most respects. In buckeye poisoning dead larvae seldom accumulate in the combs. Death of brood usually occurs during the larval period. Larvae that are not killed pupate, but many of the young bees die while attempting to emerge. Poisoned bees that do emerge are frequently abnormal, appear nervous, and seem to lack normal instincts, while occasionally a wing or leg is undeveloped or rudimentary. These bees either crawl from the hive or are carried out by older workers. Adult bees apparently are not injured. Either they are more resistant than the larvae or else the substance that kills the brood is not poisonous to adult bees. Colonies are weakened or killed as a result of the loss of brood. In both cases sick colonies recover when they are moved into unaffected territory, while brood in normal colonies soon becomes poisoned when the colonies are moved into the affected territory at a time when honey containing the poisonous substance is being gathered.

Honey from California buckeye has for years been freely used in the human diet without any injurious effects. Likewise, honey from affected colonies in western Florida has been freely used without a single case of harmful effects having been reported. It is evident, therefore, that this honey produced in western Florida, although containing a substance poisonous for brood, is safe as food for human beings.

Beekeepers in the affected territory in western Florida report that losses of colonies have been severe only during seasons of prolonged drouth. During seasons of plentiful rainfall, when the usual honey plants yielded nectar abundantly, colo-

nies built up with the usual promptness in the spring and losses were slight. Seasonal differences, dependent upon weather conditions, in the losses resulting from poisoning of brood, have also been found in the California buckeye region. California buckeye, a deeply rooted shrub, is not affected by drouth to the same extent as are most other honey plants of the district; consequently it often yields nectar abundantly when other plants fail. During such seasons severe losses are caused by poisoning. During seasons when other plants yield nectar abundantly while buckeye is in bloom, bees either do not work this shrub extensively or the buckeye honey is diluted with other honeys so that little or no brood is killed.

Plants Responsible for the Poisoning

Time did not permit extensive observations to determine the exact source of the honey in question or whether it consisted of nectar or of other plant exudations. Neither was it determined whether most of the honey gathered contained the poisonous substance or whether it was present in high concentration in a relatively small portion. After three successive seasons of drouth in the locality, the principal honey plants yielded nectar sparingly and none of them bloomed during the entire time that the poisonous substance was being stored. It seems likely, therefore, that it came either from an unusual source or from a source less seriously affected by drouth than are the principal honey plants of the locality.

Suspicion was directed to shrubs of the plant genus Hypericum, since the blooming period of these plants corresponded with the period of time that the poisonous substance is known to have been gathered by the bees. These plants were abundant in the locality and bees were observed gathering nectar from the blossoms, although they are not considered as honey plants by beekeepers. No direct evidence that these plants produced the poisonous substance was obtained, and they are named here merely as a suggestion that consideration be given them in future observations to determine the source of the poisonous substance.

Suggested Control Methods

Since colonies with poisoned brood recover when moved out of the affected territory of western Florida, it is suggested, in the absence of complete information as to the source of the honey, that this means be used to reduce losses from this disorder. When colonies with poisoned brood are reallocated, freshly gathered honey, if present in more than very small quantities, should be removed from the hives; otherwise poisoning may continue indefinitely.

It is probable that a system of beekeeping can be devised whereby a crop of honey can be produced in the affected territory without serious damage to the colonies. In 1932 the poisonous substance was gathered by the bees continuously from about the first of March until at least late in May, when work at the Thomasville laboratory was discontinued. Brood continued to die, however, until July or August. Practically none of the colonies that remained in the affected territory throughout the early brood-rearing season became strong enough to store surplus honey. It is therefore evident that, should brood poisoning become as serious in western Florida in future years as it was in 1932, colonies must be permitted to build up in some other locality if they are to reach storing strength or even to be saved from complete destruction. On the other hand, each of the colonies that were moved into the affected territory from southern Georgia early in May stored a super of surplus honey and was strong in bees early in July, although some poisoned brood was present at this time.

By moving colonies into the affected territory for a month or six weeks during the principal honey flow, it should be possible to obtain a crop of honey without serious damage to the colonies, provided the honey is extracted and the colonies are moved into unaffected territory after the flow is over. Loss of brood is of less importance in midsummer than in spring and, if colonies are permitted to build up for wintering, the loss of considerable brood during the summer will not cause lasting damage. Furthermore, beekeepers in the locality report that in 1931, when the disorder caused serious losses in spring and summer, surviving colonies built up rapidly in autumn and stored some surplus honey. It may be, therefore, that colonies which are moved into this territory in May or June will not be seriously damaged if permitted to remain during autumn and winter. Concerning the best practice to avoid loss from brood poisoning much remains to be determined.

Washington, D. C.

From the Field of Experience

HEAVY LOSS OF YOUNG QUEENS

Hot and Dry Weather Probably Cause of Disappearance of Unusual Percentage

In the article, "Forced Supersedure to Prevent Swarming," in the July issue, the editor mentions the loss of young queens in mating. We have had similar experience this year at all our yards (five in number). Last year we were able to get nearly 100 per cent supersedure by the same method. We allowed some of the best of our colonies to prepare to swarm, and, at the beginning of the honey flow the middle of June, we raised all the unsealed brood above an excluder with two supers of empty combs between. We staggered this top chamber so the young queen could leave by a rear opening to mate. It worked nearly 100 per cent. We just shook the new queen in front of the hive after mating from above, and almost without exception she replaced the old queen that was laying below.

This year we conducted the procedure the same way, and, while in nearly every instance the queen emerged O. K., she either was lost or was killed by the bees. We had made about 20 increases using sealed cells and lost at least half of the queens in them while nearly 75 per cent in the others were lost.

It has been very dry here and nearly all colonies lost greatly in weight when they should have gained. I would rather think that the hot dry weather had more to do with the loss than birds or any outside accidents while the queens were out to mate. This is our first experience in twelve years in having bees run short of stores this time of the year. Prospects of a crop are very poor.—Harold I. Perrin, Sargent, Nebraska.

POLLINATION OF ORANGES

Great Increase in Yield When Bees Were Placed in Groves

It is a somewhat mooted question among Florida growers of citrus fruits whether bees play an important part in its production as to quantity and quality. The skeptics meet the question with the statement that they have been raising oranges for many years, and have never bothered about bees or pollination. I contend that it has been demonstrated beyond any doubt that bees are necessary in the production of about all other kinds of fruit and that there is no reason whatever why nature would draw the line on oranges. We have 17 acres about two miles north of the town of Titusville. Just before the bloom opened last February we put 19 colonies of bees into this grove, all colonies two stories high and each with a fair supply of bees ready to go to work as soon as the bloom opened. This grove is 15 or 16 years old except about six acres which is five years old. The older trees have always had fair crops of fruit but nothing extraordinary. The bloom was only fairly good. We were disappointed in the setting as we feared there was not sufficient bloom for anything like a crop, in fact, we did not expect a half crop of fruit.

Of course, I knew that all the bees in Christendom could not pollinate bloom if it was not on the trees, but even this did not disturb the bees the least bit as they cleared the decks for action. I could hear them roar when standing several rows of trees away from the hives; in fact, I could hear them all over the orchard. They were tackling every bloom the second that it peeped open. The trouble was I did not think that there were enough opening. They must have saved every one of them as there are at least 1000 boxes more on this grove than it ever had before, and good judges say that the quality can not be surpassed. Even the five-year-old trees have a good crop. All this in spite of the fact that the general crop in our section is not over 60 per cent.

About 10 miles north of this grove we have 30 acres in bearing, twenty acres of which is about 10 years old and the remainder, 12 years old. Near the west line of this grove are 56 colonies of bees, belonging to a man who moved them there to catch the bloom; on the end of this grove, we placed 15 two and three story hives each boiling over with bees. As a result we had to prop some of the trees and will have about a fourth more fruit on this grove than ever before. Like the other grove, the bloom seemed scarce.

We have what the growers call "June

drops," which in my opinion is but another name for lack of pollination. I made a careful search for "June drops" in our groves and there were none. They all held where the bees were, and the quality never was better.—J. A. Klingensmith, Titusville, Florida.

BEEKEEPING IN TURKEY

An American Teaches Turkish Farmers Better Methods of Caring for Their Bees

Due to the type of local hive used in Gaziantep, Turkey, and the shortage of bee forage, the average local production is less than 10 pounds, and rarely over 25 pounds per hive. In America, good bee men secure over 100 pounds from one hive. Merrill N. Isely of Wichita, Kansas, who is serving under the American Board of Commissioners for Foreign Missions as an agriculturist in Gaziantep, Turkey, has specialized in helping the Turkish farmer improve his bees and increase the output of honey.

The local hives, says Isely, cost around 50 cents apiece, which means a small investment of capital. These cheap hives do not last long, however, and can not be handled easily. In transferring bees, brood, and honey from some of these local hives to modern ones, the honey is cut out with a long knife, while those robbing the hive are stung until they get used to it. Many of the bees are killed and some mixed with the honey during the process. The Turkish hive opens from the back, and does not permit much inspection or study.

Merrill N. Isely and his Turkish neighbors transferring bees from native to American hives. Photographs loaned by American Board of Foreign Missions, Boston, Mass.

"Most local bee men here in Gaziantep think that the queen's only function is to lead out the swarm," writes Isely. "One village man offered me a gold lira (about $4.40) if I would show him a queen bee in April. The man said he had been keeping bees for over 45 years, but had never seen a queen in the spring. I showed him the queen," says Isely, "but unfortunately he still owes me the gold lira. He then declared that he must have a queen now in each one of his 20 hives."

Typical Turkish beehive torn open to transfer the colony to a modern hive. Merrill N. Isely (left) of the American Board of Foreign Missions, stationed at Gaziantep, Turkey, has been particularly successful in helping Turkish farmers to use modern methods of agriculture and bee culture.

Isely was born in Fairview, Kansas, and attended Fairmount College and Yale University. During the war he was stationed at an officers' training school in Camp Taylor, Kentucky.—D. P. Cushing, Boston, Mass.

KNOWLEDGE

Respective Merits of Different Races. A Play in One Act

The scene is laid in a small apiary located in northern New Jersey. A Caucasian, a Carniolan, and an Italian are speaking:

Caucasian—Well, Carny old girl, how does the honey crop look to you?

Carniolan—The crop looks fine, and I found a nifty patch of white clover this morning.

Italian (alighting on a nearby blade of grass)—What do you dames know about making a honey crop? Why you're nothing but a couple of ignorant foreigners.

Carniolan—Well, I like that. I smell salt water on you, too, Mussolini.

Italian (bristling)—Why, I'll have you know that my ancestors helped feed the soldiers in the Spanish-American war.

Caucasian—That doesn't mean anything. My great-great-great-great-great grandmother lived in a hive which helped win the World War with food. Besides, didn't that government report the Boss read the other day say that Caucasians were better honey producers than Italians?

Carniolan—What does that prove? The Boss reads anything. We just arrived this morning and I can tell that Boss of ours certainly is a rank beginner. The sap banged our shipping case around something terrible. Some of the girls were pretty peeved.

Italian—Yeah, I happened to be around your hive when he put your crowd in. When the girls began acting up, I thought he was having a fit. He danced first on one foot and then on the other. All the time he was making the air blue with words no nice girl would listen to. Why I even covered my ears with my antennae.

Caucasian—You'll get used to him. We've only been here a few weeks, but we know how much he knows about bees, don't we, Mussolini?

Italian—I wish you girls would stop calling me by that name. I'm just as good an American as anybody else, and besides Mussolini is hardly appropriate for a girl. The Boss always refers to us workers as "she," so I guess I am entitled to a feminine name at least.

Carniolan—Oh, all right, you can be called Colleen for all I care.

Caucasian—Say, have you heard the latest gossip? They tell me her majesty, the queen of our hive, has a crush on one of those homely looking Italian drones.

Italian—Why the idea! I'll have you know that our young men are just as handsome as any of those old Caucasians in your dump. I should say that your queen should feel honored to be loved by one of our boys.

Carniolan—Wait a while. I'll bet you won't feel so kindly toward them when food gets scarce at the end of the summer.

Italian—Well, maybe not, but I won't have any ugly old Caucasian belittling any of our boys.

Caucasian—Whadd'ya mean ugly old Caucasian. I'll tear off your pollen baskets. (They go into a clinch as the Boss comes upon the scene.)

Boss—Well, I'll be seven kinds of a knock-kneed diploducus if that Caucasian and that Italian aren't fighting. I thought they only fought when one invaded the hive of another. Boy, I learn something new every day.

Carniolan (sotto voce) — What he doesn't know about women would fill all the books in the Library of Congress.

(The Boss separates the combatants and retires shaking his head as the curtain falls).—Allen V. Puccini, Dover, N. J.

ORIGINAL BEE INSPECTORS

Peculiar Activities of the Health Officers of the Bee Colony

On numerous occasions I have seen in an observation hive a limited number of bees busily engaged in minutely examining other bees. The behavior of these "health officers" of the colony is entirely different from that of the guards at the entrance. I have termed them "health officers" because they seem to be engaged in the serious business of very carefully inspecting the condition of the bodies of other bees.

It seems to be a serious matter for the bee being examined for it remains perfectly still or even assists the examiner by extending a wing or by twisting from one position to another while the examiner crawls all over it, moving its antennae rapidly from one spot to another, probing here and there with its mandibles, pinching and pulling hair with the mandibles and scratching nervously with its fore legs.

Much time is spent by the examiner at the bases of the wings, between the head and thorax and also between the thorax and abdomen. At times the inspector will examine a bee from the side, front, or back, nervously twitching its body all the while. The time spent on the examination of any one bee varies from a few seconds to a minute and a half or more.

Sometimes the bee being examined apparently gets tired of the procedure and crawls away or attempts to do so. The inspector quite frequently will raise its head in order to stroke its mandibles and mouth parts with the fore legs. When the examiner has finished with one bee, it usually hurries to another and begins another inspection.

The above activity may be that of house bees cleaning fielders but I have not been able to satisfy myself as to the age or occupation of the principals concerned.—J. E. Eckert, Davis, California.

THE WONDER DRINK

Made of Honey and Lemon Juice in Hot Water

It is said that there is nothing so new but that it is old, nothing so old but that it is new. The reason I repeat this old philosophy is that some five or six years ago on a Saturday afternoon while I was clearing up the mail on my desk so that I would be ready for Monday morning's work, a Catholic priest tapped on the door of our office and I invited him in. He said:

"I want to tell you something that is on my mind because I see the word 'honey' on your window. I have been a missionary in the city of Johannesburg, South Africa, where medical supplies are few and scarce. We use a simple remedy when we feel under par and we call it the 'wonder drink.' It consists of the juice of ½ lemon, a teaspoon of honey and a glass of hot water. When taken before mealtime and an hour before bed, the whites of your eyes will sparkle like diamonds and you will feel like a new person."

That evening after supper I told my wife the story. We are both at the age now where we must look to our health, and it appealed to us to try it. We all know that honey is absorbed immediately by the blood stream upon eating, the juice of lemon contains helpful vitamins, and hot water is the vehicle to put them to work. We carried this through faithfully, and at each mealtime still have our "wonder drinks."

Fred W. Muth at his desk.

When I attended the American Honey Producers' League convention in St. Louis last February I was impressed with the talk given by Mr. O. W. Hickel. He was telling us about our wonderful product and that we do not fully appreciate its healthfulness. He said that he had traveled all over the country in search of better health and had spent lots of money with doctors, but had found little or no relief until finally he discovered what he called "honey tea." It was the same as the "wonder drink."

After his instructive talk the beekeepers applauded loud and long and went home feeling that they had really found something. I, too, had found something. It impressed me that it was worth while telling others about the "wonder drink" or the "honey tea," and on returning to Cincinnati I had an opportunity to do so.

We have in the lower section of Cincinnati an association called the Lower Cincinnati Business Men's Association. It is an enthusiastic organization that meets

once each month at one of our hotels. Its purpose is that of advertising its member's business to their large membership and improving business conditions in this section of the community.

At the very next meeting I had a glass of "wonder drink" with a card explaining it placed before each of its members. When my opportunity came to give a short talk on the "wonder drink," I told them about the Catholic priest and about Mr. Hickel's "honey tea." They kept sipping the drink and many comments and promises were made that they would put it on their family table. I told them that we were packing honey in a family-size container, the 10-lb. pail, and gave them a good price. These 193 members have continued to come in our place of business and buy 10-pound pails of honey for themselves or for their friends. One of the men, a hotel manager, is placing it on his menu and it can be had at his place at any time.

To reach farther, we are sending a postal-size card with each piece of mail going out telling about this "wonder drink." We are not advertising our honey, but honey. Besides, we are using the telephone directory, and each day we mail out ten postcards beginning with the first name in the book. These cards do not carry our name or the name of our brand of honey. We tell them about the "wonder drink" and sign it "from a friend." The expense is little and we believe it is worth while. I urge beekeepers to try this method where and when possible.—Fred W. Muth, Cincinnati, Ohio.

MARKING QUEENS

Bright Colored Paint on Thorax Makes Them Easy to Find

I see endless discussions of the problem of finding the queen. Last spring, when I introduced some queens, I tried the plan of having in my kit a small phial of bright red Duco. Before introducing the queens, I clipped them, and with a toothpick, painted their backs on the thorax with the Duco. I also put a coat of the stuff on their wings. In opening the hives during the summer, I never had the slightest trouble finding those marked queens. That spot of red showed up like a red light where the queen was; and a single quick glance at a comb was enough to tell whether she was there or whether she wasn't. One could even spot her if she crawled off the comb on walls of the hive. On the other hand, I had the usual amount of trouble finding the unmarked queens.

In this connection I noticed one thing. The bees balled one queen which was marked some weeks after she had been introduced and accepted. Apparently the odor of the stuff made the trouble. I put her in a cage for a time and then released her, and it was all right. But they got the Duco off her wing. The part on her back stayed put, however.

It seems to me that if beekeepers would make a regular system of marking queens at the time of introduction, it would save many hours of valuable time later, and make a substantial difference in the cost of running large commercial apiaries, where this business of hunting queens runs up into money. Different colors would be used for different years.—Wainwright Evans, St. Michaels, Maryland.

LIVING FROM HAND TO MOUTH

How the Bees Adjust Their Affairs to Adverse Conditions

Nature has not been kind to bees in our locality this summer. During the month of June, when ordinarily normal colonies store surplus, bees were on the verge of starvation; in fact, a few colonies passed out. This is the first time in my beekeeping experience that I have seen such a scarcity of nectar during summer months. Apparently the bees had an inkling of what was coming, for they killed off practically every drone early in June.

On June 24, I looked into a colony occupying a single story hive in our home yard and found not one cell of sealed honey or fresh nectar. The bees were busy searching for nectar but the weather had been so fearfully hot that all nectar plants were withered. Early the following morning we had a rain. Late that afternoon I examined the same colony and found 24 cells of fresh nectar.

Brood-rearing was then curtailed. The bees would spend some time in the forenoon searching for nectar, then, for the remainder of the day, they would become listless and sit at home as they do late in the fall following the active season. Thus the bees during an abnormal dearth of

nectar are able to adjust themselves to the changing conditions.

That was encouraging. Since then the bees around Medina have been living from hand to mouth. We are hoping for a fall honey flow, but unless we get some rain, we may be disappointed. Our bees in western Ohio are somewhat more prosperous, having filled their food-chambers.

It takes all kinds of experiences to make a life. It is difficult to be optimistic under present conditions, but the beekeepers who will win out will be the ones who hang on in the face of adversity. As a rule, one extreme follows the other. When we who live in the dry weather areas finally experience some rainy seasons, as we doubtless will, we will be setting pretty but we will hardly forget the dry summer of 1933.—Jack Deyell, Manager of The A. I. Root Company Apiaries.

COMMENTS ON CURRENT ITEMS

On page 394, the editor in mentioning the large loss of queens suggests that possibly the bee-eating birds were more numerous this season than usual. I have been wondering if it is not probable that the starlings have learned the trick of eating queens. If they have added to their destructiveness the habit of picking up queens, it is certainly a serious thing for the beekeeper. They are increasing to an amazing extent and are already a bigger pest than the English sparrow and that bird has not one redeeming feature.

On the same page the editor says: "Another important item in looking toward next season is the elimination of all old or otherwise inferior queens and replacing them with young vigorous queens of good strain. In many cases this is the most profitable work a beekeeper can do toward his next year's honey crop." I say yes, and a part of this season's too. My opinion is that when an apiary of 100 colonies can be requeened at an expense of about $30.00, it might be good policy to requeen that yard with a good strain of young queens every year. At the price queens can now be bought from reliable breeders, it would hardly pay the beekeeper to bother raising his own. Queens raised in June do not, as a rule, swarm the next season.

In regard to fermentation in honey, we have not been troubled with it for years. We do not extract unripe honey and we store it where the temperature varies very little. We have had honey in 30-pound pails stored for over two years with no sign of fermentation or getting the least bit tart. We are now melting up honey that was stored in the 30-pound pails. Nearly every one is crystallized white to the top with no levulose showing over the top. I think that the fairly even temperature and the fact that this honey was well ripened have a lot to do with its condition.

About the house apiary (page 417), such apiaries are popular in Europe but not in America. I can understand, however, about the bees not being a nuisance when extracting is done on the lower flat. The bees start to fly so far above that there would be no trouble of their bothering anything in the story below. But if little honey is coming in from the fields and the extracting room is not bee tight there might be trouble. There is an old saying that there is no such thing as a bee-tight honey house. Don't you believe it. Such a place can be made absolutely bee tight.

The idea that galvanized wire cloth poisons queens is new to me. If it poisons queens, it should also poison worker bees. Before the tin bee-escape was on the market, I used that kind of wire for bee-escapes and never had any trouble.

Nearly every day thousands of beautiful big cars pass my honey stand. One wonders where all the money comes from in these close times. It gives me the notion to get a 1920 Ford and paint a sign on the side, "Don't laugh, big boy, mine's paid for."

That was a good story, Carrie Root Boyden (page 409). We have had some experience, too, along the same line, but could not tell it as well as you have done. A little diplomacy plus courtesy has helped us through many hard places.—J. F. Dunn, Ridgeway, Ontario.

SPINSTER JANE SAYS—

Over in London, men have once again made a sad muddle of things, man-like. All because of gold, too. Dear! Dear! Will they never learn common sense? Had women gifted with tact and greater insight been sent, well, matters would have been amicably settled. The least important thing—except in men's eyes—has been taken first, and all being more or less selfish, failure to agree results.

Of first importance is a friendly spirit in our neighbor. Good will is of greater importance than purchasing power. To make use of the latter we must cultivate the former, but men always go about things the wrong way. They have stirred up strife, now they will try to do business with those they have riled.

Had every man a job, there would be no depression. Doles and relief being handed out takes away self-respect and makes a lot of lazy men and women, too. We need work to keep us content—yes, and fit.

Work is really man's salvation. It keeps him from being distracted by evil influences. Our criminals are usually idle men or men reared in idleness. Just look at the newspapers since unemployment started and you will read of countless burglaries, murders, kidnappings and suicides.

Work, however, can be carried to extremes, and to prove this look at the worker bees during a honey flow. They wear themselves out hoarding up stores they will never live to enjoy, just as many foolish humans do. I saw a worn-out worker while at work in the garden a few days ago. She was very restless, going round and round. I tried to shoo her away, but she paid no attention to either me or my shooing. She refused to fly. Poor thing! She knew she was done, and wishing to save her colony work on her behalf, she crawled off alone to die, saving funeral expenses, as it were.

But why so restless? Did she fear death? Was she worried over that new super still unfilled? Did she mourn over her loss to her beloved queen? She reminded me of another death. A woman I knew well was about to die. Like many another woman, she was forced to carry all the burdens of the home. After working in an office all day, her husband simply rebelled at having any of the cares of home or garden—they lived in the suburbs—saddled upon his shoulders. When the children were ill, he didn't want to lose his sleep. It unfitted him for his work! The end drew very near, but at the striking of the clock she roused and said, "It's time the chickens were fed and shut up."

Here is a wonderful object lesson for us all, even for beekeepers. We must not let our work or our ambition obsess us. When our time comes to pass on, may we peacefully fold our hands and say, "Well, I'm glad the time has come at last. This is the perfect end to my life. I look forward now, to the culminating joy ahead. I enter the dark Valley without fear, for just beyond, I know, is glorious light."

Queen Mary has begun another large colony. What people those English are, anyhow, for spreading and growing, though I do believe the subjects of Mrs. Roosevelt are their equal, perhaps their betters when it comes to laying away stores. Here's a long, successful life to both!—Spinster Jane.

The North China Beekeepers' Association's exhibit at one of the many county fairs which are being conducted by Harry S. Martin of the American Board of Commissioners for Foreign Missions in Tanghsien, North China. Mr. Martin is instructor and special agricultural missionary connected with Jefferson Academy.

"Bees were used in warfare."—Barnes.

War in olden times was different from what it is today. Those were the good old days before such infernal things as poison gas and condensed milk were invented. Then as now, the army traveled on its stomach, which was usually empty. Some of the instruments of warfare were stones, hot water, hot wax, pitch, and bees. When they used pitch it was known as a pitched battle, and when melted wax was used it was stated that the battle waxed hot. These were used mainly in defense, although the enemy considered them quite offensive. When an army was besieging a city and a brave soldier was fighting gallantly, if he got a bucket of hot wax down his neck it had a tendency to lessen his valor. Soon the army learned to wear armor which would shed hot water, pitch, and wax.

Such was the state of affairs during the year 306 when an army under Chief Thinkamus, 500 strong, attacked the city of Zach. The army with glittering armor approached the city wall carrying a huge battering ram. It looked to the beseigers like an easy victory, for the wall could be battered down in an hour's time and the city held few hardened soldiers. When the army came to the city hall, Thinkamus took charge of the wrecking crew which began battering the wall, keeping time to his chant which interpreted means "Hee-O-Hee."

The defenders were flabbergasted, for when they poured over a five-gallon crock of pitch, the armor turned it off and the only effect it had was to make the soldier look like a tarred roof. Barrels of hot water were poured on the head rammer, but the only effect it had was to cause the soldier to take a swim in the moat when the armor began to heat through. A bucket of hot wax was then poured on another soldier which only made him look like a wax figure. By this time a small breech was made in the wall when the gang moved over in hopes of soon having a pair of breeches. The defenders were called together by their chief, Scrapycus, who addressed them thus:

"I want all you mugs to take it from me, we are in a pickle. If those guys ever get through this wall it will be just too bad. Let fly the stones."

Several hundred stones were rolled over the wall which delayed the ramming, as it kept the besiegers busy dodging. One got his big toe mashed badly. The stones, however, were mainly cast at Chief Thinkamus with the result that his armor was badly dented in many places. Again Chief Scrapycus held council. He said:

"Now, I want all you birds to get this. We have just one guess more. It is our last and final shot, but I believe it will work. It will be a complete surprise. I have twenty crocks of bees bred and selected especially for their military fitness. They are shut in, but in falling the crocks will break and I feel certain the army will do likewise." Accordingly, the crocks were placed on the wall and at the command from Chief Scrapycus, "Give 'em the works," the crocks were shoved over.

An armor lacks a whole lot of being bee-proof, so there was a lively dancing and scrambling, then the army took to the moat.

Now, while an armor will shed water, it lacks a whole lot of being bee-proof. The bees poured into the cracks around the neck, the eye holes, arm and leg joints. Forthwith there was a lively dancing and scrambling. The ram was dropped and the army took to the moat mid screams and howls and the rattling

(Continued on page 495.)

From North, East, West and South

SOUTHERN CALIFORNIA.—Since our last letter we have traveled half the length of our state, that is, to San Francisco. Outside the irrigated sections it looks dry. A green alfalfa field kept moist by irrigation was a relief at any time.

The territory is so immense and the growing crops so varied that it behooves a beekeeper to keep his eyes open and his wits about him and follow the blossoms. Where there is moisture there will be bloom, and where there are flowers there is likely to be nectar. Even with the assurance one feels with a good alfalfa range, one might profitably move to the orange or other early honey sources and get back in time for the honey on the home range. In other words, migratory beekeeping has so entered into western beekeeping that we, who have practiced it, would not think of giving it up.

Hives Well Filled With Honey This Fall Are Best Assurance for Strong Colonies Ready for the Honey Flow Next Year.

Predictions in my last letter were about right. The crop of orange honey is about as last year which was below the average. Prospects for later honey are, if anything, not as good as last year. Buckwheat and white sage are drying up fast. Beekeepers who get an extracting from wild buckwheat will be lucky. Most beekeepers hope for a fill-up for winter stores which is one thing to be thankful for. We have found that a hive full of honey to start a colony breeding in the spring is the greatest assurance of a colony ready for the honey flow later on. One can feed, of course, but there is nothing like plenty of stores against a rainy day in spring.

Orange honey started off at prices quoted at 5 to 5½ cents. While beekeepers feel that it is not enough considering the short crop and advancing prices of other commodities, the buyers are holding off seemingly of the opinion that enough will be compelled to sell to take care of current needs. This honey is of a good color and heavy body this year, and, so far as the honey is concerned, it should command the top price.

Beeswax is a little stronger than it was, but still low as compared to the price for so many years. Disease conditions are reported as well in hand and few beekeepers report any trouble along these lines. —L. L. Andrews, Corona, Calif.

NORTHERN CALIFORNIA. — June was a real bee-moving month and the moving will continue into July when we shall settle down till time for the return moving in the fall. So far this season production has been disappointing. Long before the honey flow in the eucalyptus districts was over, beekeepers in the alfalfa districts were moving farther north. Many went into the mountain districts where the prospects early in the season were good. The places vacated were soon taken and the result is that the alfalfa districts are crowded.

Those Who Are Most Alert Are Securing a Crop of Honey in Spite of the Generally Adverse Conditions.

We have a few beekeepers who know bee behavior and have bees in the proper condition when the honey flow comes. They also know where the nectar is, and have their bees in the right pasturage at the right time. They will get a crop in spite of the poor season. Some of our most northerly counties are showing good results as far as having bees in good condition is concerned. In many of the northern counties swarming has broken all records. In Placer County, where in past years there has been a heavy loss from buckeye poisoning, bees are working actively on it with no loss from poisoning.

Never before have our beekeepers been more at a loss to know just what to expect in the way of a crop of honey. When the season is over we shall know, and when that time rolls round some who are expecting a crop will be disappointed. Some who are not expecting a crop will be surprised at the last results. Surely beekeepers above all others can take for a motto: "I reserve the privilege of changing my mind."

The Pacific Coast Station at Davis is doing fine work for the beekeepers of the Pacific Coast, notwithstanding the obstacles they have overcome on account of the depression. To date, all of the men are

working. We are not entirely out of the depression, but the work done by the station is a strong argument in favor of going on without cutting anywhere. If the help must be cut down, beekeepers may be sure it will be resumed as soon as financial conditions improve.

The many friends of Geo. W. York, editor of "Bees and Honey," will be sorry to hear of his illness. We are able to report his improvement and hope soon to see him in his usual good health.—C. W. Hartman, Oakland, California.

ARIZONA.—The mesquite and catsclaw honey flow for Arizona is completely over at this time (July 4). All reports from the Salt River Valley are that a normal crop was produced there, the grade being very good. The crop here in southern Arizona was 50 to 60 per cent less than the yield of the Valley, which means we have had a light crop for the second season.

Here the honey flow was very short and also very peculiar. When the catsclaw was at its best in bloom, the bees worked it two to three hours in the morning and a couple of hours in the evening. After it had passed its best in bloom the weather changed and the bees then worked it the entire day. The nectar flow was not regular as usual but went and came according to weather conditions.

Our bee inspectors made their rounds just at the beginning of the honey flow. From reports I learn that they have covered most of the state. Very little foulbrood has been reported found. I have been practically brought up with bees from childhood and I have my first case of foulbrood to see. My father, now past 80, does not believe there is such a thing as foulbrood. He began with bees in this state 45 years ago. It is true that we have had several cases of foulbrood in this state the past few years but it was quickly burned by inspectors as soon as found. There are quite a few beekeepers who, like myself, have never had the opportunity to observe foulbrood, and from what I have heard of it, I hope we never shall.

Several large producers have stated that they expected to hold their honey for the present. It may not advance in price a great deal, but should improve over prices now being offered by buyers. Demand should improve as people go back to work. There is no old honey on hand here.

The stockmen and a few beekeepers have occasion to celebrate today, for we have just had a fine summer rain. This is the earliest for several years, and we hope it continues. It means fine feed and fall honey for producers in the higher elevations.—Leslie Wedgworth, Oracle, Arizona.

UTAH.—Beekeepers in northern Utah are confronted with a combination of circumstances. Low prices for honey, condition of bees one month behind, heavy spring loss, lack of irrigation water, dry land crops already burned up, millions of grasshoppers in places, foulbrood worse than usual with but little money appropriated for inspection, and alfalfa weevil infestation the worst in years. Outside of these facts, there isn't much news.

In Spite of Adverse Conditions, Beekeepers Still Hope to Have Some Honey Later.

But as you know, hope springs eternal in every beekeeper's breast. In the event that we get a good rain soon, as frequently happens early in July, then if the season will be correspondingly as late as the spring, it will be possible for us to get some honey, but not a crop.

The hard winter and late cold spring that made so many weak colonies, seemed to affect the queens as well, hence an undue amount of supersedure that came so late that many colonies are just getting well started.

Three cars of old honey were shipped from northern Utah during the past month at an advance of one cent per pound.—M. A. Gill, Hyrum, Utah.

WYOMING.—Many sections of the state have just experienced the hottest and driest June on record. Here at Laramie the mercury rose to a record height for June, and the local paper carried quite a write-up about it. The temperature causing the excitement was 89° F. It was actually considered uncomfortably hot. I had just returned from a motor trip through Nebraska, Iowa, and Illinois, so our "hottest" seemed cool to me.

On the trip east I passed through several sections where the corn was in grave danger of being burned out and the small grains had been cut for hay. Farmers there thought there was still time for the corn but they must have rain soon.

While making a long trip through the country, it is interesting to note the different farming conditions. In eastern Nebraska the second cutting of alfalfa was in the stacks, while here the first growth is just beginning to bloom. White sweet clover was in full bloom, while here it is just beginning to bud. While driving through Nebraska, we had all the car windows open and still we roasted. Then that same evening as we crossed the Sherman hills in eastern Wyoming we were forced to close all the windows in order to keep warm.

Rain is badly needed in Wyoming if anything like a normal honey crop is to be harvested. Marketing conditions should improve as there is no carry-over of honey in Wyoming, and there should be an advance in price with the new crop.—C. H. Gilbert, Laramie, Wyoming.

MANITOBA.—At this date, June 30, crop prospects are every way in this province. In some parts it is very dry, in others very wet. Farmers are cutting sweet clover which is coming into bloom, and the growth is short. These conditions at cutting time in past years were followed by a honey crop if rain followed the cutting. When springs are very favorable for growth and the first crop is heavy, the roots seem to exhaust themselves, and the second growth on which we count for our big crop of honey is shorter in years when the first cutting is not so heavy. Bees are in good shape for the honey flow, but so far have gathered very little.

Prices of New Crop Honey Are Expected to be From One to Two Cents Per Pound Higher Than Those of Last Season.

Increased prices on nearly all classes of goods should also bring us an increase in the price of the next crop. Grocery brokers are suggesting from one to two cents a pound increase. We are hoping they will back these suggestions with actual offers. Exchange rates on Canadian funds are under the ten per cent mark. Those who still owe for their package bees are in luck compared with those who paid when the rate was twenty per cent.

Our first field day was held under the auspices of the Springfield Association on June 24. There were over one hundred in attendance. Picnic field days have been held in that district every year for the past twelve, and the attendance increases as the years pass. The signing of contracts for more than a carload of honey cans completed the program for the day. The readiness with which each one came forward and placed his order was a fine demonstration of the co-operation that has made this local association serve its members so effectually.

With the market clear of white honey we are looking forward to a good demand for the new crop. Nearly all of our large producers, however, have doubled their outfits this year, and a bumper crop may cause congestion if they all try to sell at once. We find it very difficult to get anyone to hold goods when money in country districts is scarce and honey is generally hustled on the market as soon as out of extractors.—L. T. Floyd, Winnipeg, Manitoba.

TEXAS.—At the beginning of the month of June, the prospects for a honey crop outside of the cotton district were extremely meager. Horsemint had come and gone without a honey flow. Mesquite had bloomed and the bees did not collect enough nectar from it for daily consumption. Beekeepers all over this section of the state were appealed to by the honey buyers for spring-crop honey. Only a few had anything to supply.

However, on June 6, a few mesquite tags were seen and while the bloom clusters looked ragged and "sorry," on June 14 the scale colonies commenced to show an increase in weight. At the end of the month through a large part of southwest Texas, the average surplus stored from mesquite was 30 pounds. In some locations the amounts stored are the equivalent of the average crop. In other places it was far above, but as with mesquite there are many places where no bloom occurred.

As a helper, in this honey flow of three days, white brush gave a very decided addition to the honey flow, it being estimated that at least six pounds of the 30-pound average is from white brush. In much of southwest Texas, this will be the only honey flow of the year. On the black land and in northern central Texas, cotton is reported to be yielding heavily and is being helped out by black-land horsemint and sweet clover.

Reports from the field indicate that there will be little crop to be taken off in southwest Texas as the amount of honey

in the hives now is very little more than what is needed to carry the bees through the coming winter. There seems to be considerable demand and the quality of honey will be good as it is largely mesquite. However, the amount to be sold will not affect the market and it is doubtful if more than the ordinary price can be obtained for the crop. In the northern part of Texas the beekeepers are very hopeful that the cotton honey crop will be up to normal.

The month of June gave southwest Texas only 1.77 inches of water which is nearly an inch below the normal. The winds during the same period were much above normal and the atmospheric humidity so low that the rain which fell disappeared immediately, not into the soil but back into the air. It is doubtful as to many of the fall nectar plants producing a bloom this year that is worth while. All of the desert shrubs and trees are acting true to habit—blooming and fruiting rather than making a new growth. According to a popular tradition this means that 1934 will be a year during which we can expect no mesquite honey flow.—H. B. Parks, San Antonio, Texas.

NORTH DAKOTA.—Fairly heavy rainfall, which has occurred over a large portion of the state during the past ten days, has improved prospects for a honey crop. Previously the weather had been hot and dry with the result that honey plants were injured and failed to secrete a normal amount of nectar.

Up until about the first of July, bees gathered only about enough honey to make a bare living, and colonies were slow in building up to proper strength. Several of the commercial beekeepers becoming alarmed at the conditions as prevailing in their respective localities moved their apiaries considerable distances to more favored places. The recent rains, however, have temporarily remedied the condition of the honey plants. Sweet clover is in full bloom and bees are gathering nectar as well as could be expected.

In the event that conditions continue favorable for honey production from now on, it is unlikely that the total amount of honey produced will be the equal of any recent year. Judging by the reports received there was an abnormally heavy winter loss, and in many instances the losses were not replaced with package bees this spring.

Honey Is Being Featured in a Number of Exhibits at the World's Fair, Chicago.

The writer and his wife have just returned from a trip which included the World's Fair in Chicago and were pleased to note while there that honey was featured in connection with several exhibits. In at least one instance honey was being dispensed in attractive containers to visitors. En route by automobile, it was interesting to note the occasional roadside stand well stocked with honey for the passing tourists.

A very interesting feature of the trip was a visit to the American Honey Institute at Madison, Wisconsin. Here we were shown the well arranged kitchen in which Mrs. Jensen and her assistant, Miss Taylor, develop and test honey recipes before endorsing them for the public. We were very favorably impressed by the capable and efficient manner in which the work of the Institute is being conducted. Without question the American Honey Institute is the most far-reaching factor we have in promoting a greater and more varied use of honey. It justifies all the financial support that the beekeeping industry can give.—J. A. Munro, Fargo, North Dakota.

WISCONSIN.—For the first time in the memory of our beekeepers, there has been a decided shortage of pollen in some localities. This was presumably caused by heavy rains that occurred at the time when most of the flowers were in bloom. The rains came down with considerable force, and either washed the pollen out of the flowers, or the bees were unable to get to it.

A peculiar condition existed in a number of bee yards up until June 15. Many adult bees after leaving the hive were unable to fly, and in some cases complete colonies were almost entirely lost. The principal area in which this disturbance occurred extended east from Madison to Milwaukee and south to Green County. No indication of any disease organisms could be found, but there was noticed that in many cases the abdomen was usually transparent as though an abnormal condition existed in the body fluid. An unusual number of adult bees seemed to be poorly

developed; legs were missing, wings were incomplete, and the bees were carrying these deficient members out of the hives. Sufficient honey stores were present so that we can only guess that perhaps some nutritional trouble occurred.

The reports on the honey crop up to this time are quite variable. The most favorable reports come from the Milwaukee region, where a heavy flow is being secured from sweet, alsike and white clover. The color and flavor of the early honey in that region is reported as excellent. Further west toward Madison, the color and flavor of the early honey was quite good, but is now badly mixed with honey of poorer quality. Honey from the University yard shows a much greater dextrose content than of levulose. All local honey has a heavy, cloudy appearance. Some honey is being sold, but at no advance in price.

The weather conditions throughout the state have been extremely variable during the past month; during the past week there have been heavy local showers throughout the southern part of the state. Previous weather that promised to dry up the plants has given way to cool weather with lots of moisture, and the present outlook is greatly improved.—H. F. Wilson, Madison, Wisconsin.

ALABAMA.—Rains occurred over most of Alabama during late June, and the bees are now working sweet clover. Beekeepers are hoping for enough honey for winter stores, but there is little chance of any surplus especially where packages were shipped.

Orders for queens have dropped off for the last ten days but this is always expected in July as many of the larger northern beekeepers are too busy caring for a honey crop to requeen at this time. August is requeening time and we are expecting a much better demand at this time. In fact, indications are that the demand may exceed the supply.

A Code of Fair Competition for the Package-Bee Industry Is Being Prepared to Submit to the Government.

On July 6, the Alabama Beekeepers' Association held a special meeting in Montgomery to draft a proposed code of fair competition to submit to the Industrial Recovery Administrator. A committee was named to meet with representatives of other southern states and revise this code to meet all conditions. This meeting was well attended; there were representatives from two other states.

Attention was given to trade practices that would reduce the cost of production and marketing of both packages and queens. In the past it has been customary for shippers to guarantee satisfactory service from packages and queens, and shippers were often called on to make replacements where the fault was entirely with the receiver. Many customers requested replacement of queens that were superseded, with packages; shippers in many instances have furnished them. The fact that many customers have no trouble from this source indicates that the trouble is at the receiving end. It was decided that in the future the liability of the shipper would cease with the safe arrival of the goods. In this way the customer who handles his packages so that no replacements are necessary will save on the first cost, while the customer who has trouble will pay for his own troubles. This policy was approved for the code of ethics but will not be put into effect till the code is approved.

Reports that we get from our customers are very encouraging. Most of them have sold all their honey and are getting a good crop. If prices will strengthen before the crop is ready for market, beekeepers as a whole will be in much better shape than for several years past.—J. M. Cutts, Montgomery, Alabama.

GEORGIA.—The swarming propensity reached its height throughout the Coastal Plains by May 15. This occurred twenty days earlier throughout the Piedmont Plateau and the latter part of May in the mountain regions. Throughout the state it was the strongest ever known. It was impossible even to check swarming in normal and above-normal colonies, and queens greatly reduced their activity during the time.

The Worst Swarming Ever Known Resulted in Poor Work During Heavy Honey Flow from Gallberry.

Queen cells were removed at each weekly visit, the queens given room, and additional storing room was given. This availed nothing. The great working force

in each colony gathered nothing during the greatest honey flow we ever had from gallberry and saw palmetto. Not over a third of a normal honey crop was made throughout the state, and this was made by colonies below normal in strength and those that did not contract the swarming fever. Had this not occurred we would have made the greatest honey crop ever harvested in the state, for there was an abundance of nectar. Bloom and weather conditions were ideal.

About every fifth year, saw palmetto, which grows over the flat woods along with gallberry, gives a yield, and this was the year it hit. About one-fourth of the surplus stored throughout the flat woods was from this source. Up to date, July 1, there has not been an abrupt cut-off in the honey flow. While there was much unfinished honey at the end of the gallberry flow, this was largely finished on the palmetto and since then the bees have stored a little along from minor sources such as summer ti-ti and the early blooming weeds of the forest, filling out and capping over the unfinished comb and slowly drawing out foundation. This has not occurred before in many years.

Honey selling is now the order of the day everywhere, but prices offered are low in spite of the fact that the prices of other foodstuff are soaring. Beekeepers are having to accept from three to five cents a pound for best extracted honey, and from four to six cents for chunk honey. In spite of the fact that beekeepers are offering their honey at the lowest prices ever known in the state, they are not meeting with great success in disposing of even a portion of their crops. The many small buyers and distributors of honey are not as active as we might expect. With such low prices one would expect them to be more active.—J. J. Wilder, Waycross, Georgia.

MICHIGAN.—The drouth hurt our chances for a bumper crop, in some places reducing prospects 50 per cent. In northern Michigan, a killing frost and freeze June 14 and 15 did the honey crop no good, injuring milkweed and the wild raspberry considerably. However, the alsike and white clover honey flow was above normal until the dry weather brought a halt, and sweet clover is going good in many sections. There was probably more honey on the hives the first day of summer than ever before, but the final crop will not be a bumper without lots of rain and second growth clover yields. The color and quality of the honey is the finest ever.

Apiary inspection has been going on under the direction of Chief Inspector C. D. Doane, Jr., with the prospect of somewhat of a curtailment after July 1.

The legislature levied a 3 per cent sales tax on all retail sales, which will affect the beekeeper who sells honey to retail customers. All who operate roadside stands are subject to a license, apparently. Information may be secured from the Sales Tax Office, Lansing, and all who are affected should be informed regarding the provisions of this law.

Beekeepers Are Expecting Better Prices for This Season's Honey Crop and Less Distress Selling.

With everything else stiffening in price, it is only natural that beekeepers should be thinking along the same lines. No quantity of honey from the new crop has moved yet, but supplies of old honey are practically gone. If we read the handwriting on the wall correctly, there will be little "cheap" honey in Michigan this year. For, while the banking situation has left us in a deplorable "mess" as far as business is concerned, many out-of-state inquiries indicate the interest in the crop.

The program for the big meeting at Oscar Schmidt's place, August 3-4, is one of the best and will furnish a surprise or two. E. R. Root will be the main speaker. It is hoped that Mrs. Malitta Fischer Jensen will also be present to give us a picture of the fine accomplishments of the American Honey Institute. A tour of the Saginaw Valley the forenoon of August 4 will visit the leading apiaries of the region. A famous orator will give an address on the evening of August 3. Better not miss this.—R. H. Kelty, East Lansing, Michigan.

NORTHERN INDIANA. — Excessive rainfall in April and May has been followed by more than a month's drouth, broken by only a few scattered local showers. During most of June the temperature has ranged from 95° to 103°. The result is that there will be little if any surplus white clover honey in northern Indiana.

Basswood has yielded well where there are trees, but, owing to their absence or scarcity in most localities, the total

amount of honey produced will not be materially affected. On account of the hot, dry weather in June, sweet clover does not appear to be showing up well, but recent heavy rains may improve the outlook.

The Scarcity of Fruit Should Help to Improve the Demand for Honey in This Region.

Weather conditions have affected also the various kinds of fruit. The strawberry crop was a near failure. Apple orchards, heavy with bloom in May, show scarcely an apple. Not only have the blossoms been killed, but many of the leaves have fallen off the trees. Other fruits have suffered likewise and it looks as if there will not be much in this line to compete with the sale of honey. It is said that these conditions prevail over a considerable portion of Indiana.

Bees appear to have an especial liking for sweet clover. Every summer for a number of years we have noted that they work hard on this, seeming to prefer it to any other nectar bearing flower. They wear themselves out and most years barely make a living, except in cases where large fields of the plant are within flying distance. In this locality buckwheat seldom yields nectar in any considerable quantity.

At some yards, where the land is low, as along wide river bottoms, goldenrod is the chief source of honey. This honey is of a bright yellow or golden color when unmixed with that from other sources and is of excellent quality. Because it is not white, being somewhat mixed with other honeys, it is quoted at a lower price, notwithstanding that its quality is superior to any sweet-clover honey we have been able to produce in this locality.—E. S. Miller, Valparaiso, Ind.

WESTERN NEW YORK.—Cold weather, hot weather and wind storms describes the conditions that prevailed in New York during the clover bloom period. In western New York where most of our bees are, it was too cold for them to work for several days of the best part of the period, then came extremely hot weather with a pretty good honey flow for about a week. But the extreme heat dried up the clover rapidly, and before July 1 practically all clover had burned up or had been cut and harvested.

An Apiary Located Near Fields of Alfalfa Is Yielding Three or Four Times as Much Surplus as Other Apiaries.

This part of the state is not an alfalfa growing region, but each year the acreage of this plant is increasing. Fortunately we have one large yard located where there is a large acreage, and this yard evidently will give us a surplus of three or four times as much as the average where there is no alfalfa.

Bumper crop, no crop, or normal crop, New York beekeepers always attend the summer picnic and meeting of the state association. This always is the great event in fraternal beekeeping activities in New York. Several hundred annually spend their most enjoyable and profitable day of the year on this occasion. This year probably will be the greatest of all time when the regular meeting and outing will be held at Rosland Park, Canandaigua, New York, on Friday, August 4.

Then on Saturday, August 5, an international meeting will be held at the Larkin Farm at Queenston, Ontario, which is just across the Niagara River from Lewiston, N. Y., and only a few miles from Niagara Falls.

We are receiving numerous inquiries for samples and prices on new-crop clover honey, but as yet have made no quotations. There is no reason why honey should not share in rising price levels. Producers should watch their step and not sell too soon at too low a price.

July 11—Mr. Gould, our State Apiary Inspector, tells me that the crop in this state is the poorest he has ever seen, and that he believes the average will be less than 25 pounds per colony. Our own crop is far short of what we reported a few days ago. One yard located in alfalfa will give us in the neighborhood of 100 pounds average. But we have 1000 colonies that will not average 10 pounds of surplus per colony. In short the New York crop is a complete failure except in a few instances. I doubt very much if there will be much fall honey either. There is practically no buckwheat sown as the ground is too dry. Feeding may have to be resorted to for winter stores unless conditions change. Alfalfa seems to be the only plant that has yielded anything in this state so far this season.—H. M. Myers, Ransomville, New York.

ONTARIO.—I have vivid recollections of trotting around with my grandfather in his apiary of 200 colonies, when I was 10 years old, asking all sorts of questions, so that means fifty years have been spent with more or less activity among the bees. And after all that time, during which I should have been able to learn something, today I am amazed at how little I really do know about beekeeping, and I am reminded of the saying by Josh Billings, I believe: "What is the use of knowing so much when half of what we know ain't so."

Certainly I know nothing as to what factors really control nectar secretion. As late as June 15 of this year, I told to all who asked me about prospects for a honey crop, that unless we got a lot of rain soon, there would be no honey from the clover at all. Well, we got no rain at the time, yet during the next seven days after my assurance to the contrary, we had a very fine honey flow from alsike. Owing to the intense heat and absence of rain, the ground was baked and pastures were dry. Alsike grown for seed was ready to cut by July 1. Then for the first time in our experience alfalfa assumed the part of a major honey producer and the flow continued. The result is that we have a nice crop on the hives and the quality appears to be above the average for our locality.

Alsike of late years has been a failure many times even when conditions seemed to be ideal and one alibi advanced was that the soil has become depleted of lime. But if these reasons are valid for one year, why not for the present season? So is it any wonder that I frankly admit that any knowledge I may have regarding conditions necessary for nectar secretion is of a very negative nature indeed?

The Province Has a Great Variety of Honey Crop Conditions Ranging from Failure to a Good Crop.

From many reports received from the province at large, it appears that the western part of Old Ontario has crops ranging from fair to good, while most of the eastern parts report short crops or absolute failure. Exceptions are, of course, in evidence, over all this area and in localities where there is sweet clover the crop will be good as sweet clover is yielding heavily at this date, July 10. Our colonies were very irregular in being prepared for the honey flow; also localities varied much even when only a few miles apart. For example, we have two yards in fair shape that will not average over 80 pounds per colony unless the second crop of alfalfa yields some nectar. Ten miles away, two apiaries that were in about the same condition in the spring will run around 200 pounds per colony. This is explained by good rains at one place and none at the other, and also by the fact that the one location has a few fields of sweet clover that are being left for seed. However, the season has turned out so far much better than we expected to be possible, so we have much to be thankful for.

More packages were bought than usual as we had a heavier winter loss and quite a lot of queenless colonies. They have been disappointing this year as the honey flow came too early for them to be ready except in places where we have sweet clover. Packages arrived in perfect shape and were placed in the hives in good condition.

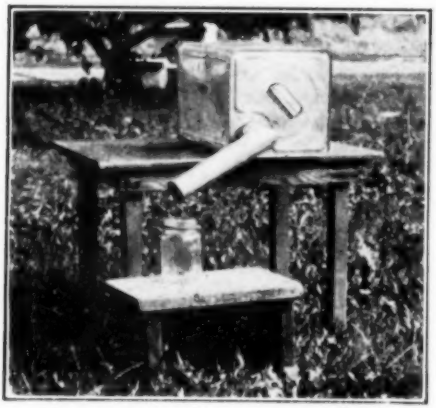
The shipping of packages has reached the point that is almost perfect; but what is the matter with so many of the queens? This year, to be sure of no fault on our part, the bees were placed in the hives and given combs of honey sufficient to care for them for two weeks even if no nectar came in during that period. After that we examined them, and what did we find? A few were almost gone altogether; the queens were missing and the bees apparently had drifted to other colonies. In far too many cases, we found drone layers, queens laying but little, and queen cells being built to rear another. Some articles have been published to prove that failing queens in packages was usually caused by careless handling of bees by the beekeeper. There was nothing doing along this line in our case as no handling was done. I get many reports along this line. The question of queens is the all-important one to be solved if the package business is to continue in a commercial way.

As the new honey is of very fine quality, and fruit will be scarce owing to drouth local demand seems quite keen. All old honey being off the market is another good omen for the sale of the present crop at a living figure. Prospects for next year's clover are bad unless we get lots of rain soon, but next year is an abstract term at present, so why think of it? —J. L. Byer, Markham, Ontario.

Heads of Grain from Different Fields

A Handy Filling Device

We retail most of our honey locally to consumers who bring their own containers. My husband is away from home the greater part of the day, so it has been necessary for me to wait upon honey customers. Hefting 60-pound cans to fill all sizes of containers is not easy for one who weighs just around 100 pounds herself. So my husband thought of and made this little device. It consists of a tin tube about nine inches in length and one and three-fourths inches in diameter with a short elbow soldered to the cut-out screw cap of a sixty-pound can. The can rests on a shelf or table. With a turn of the wrist this tube comes into place over the

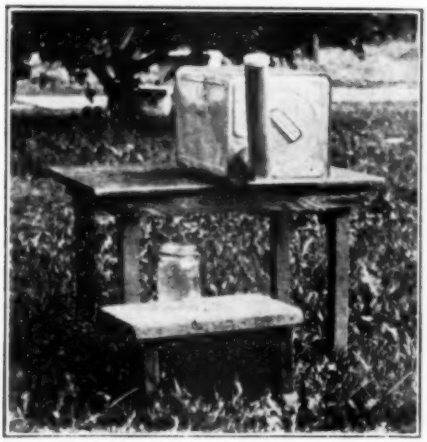


To fill the jar, the tube is lowered by turning it on the screw cap.

container to be filled. Another turn of the wrist and it is securely back in place again. On the open end of the tube we place a tight fitting lid to keep nature's sweet clean and sparkling. This simple devise has certainly proved a wonderful help to me. I heartily recommend it for tired backs and protesting muscles.—Mrs. Benj. Nielsen, Aurora, Nebr.

Grocer Learns How to Sell Honey

When I first began to read Gleanings, I was quite indifferent to the Food Department, scarcely giving it a glance. However, I found I was passing up some valuable information therein. Now I peruse that department in every issue. To a grocer, who was having difficulty in selling my honey, I showed the table giving caloric values of the various kinds of syrups and sugars as published in the February issue. That woke him up so I insisted that we move the stock up on the counter for advantage. He hadn't sold a bucket of honey in over a month. Two days later when I stopped in he said, "I



A cap is placed over the open end of the tube when not in use.

want more honey." Surprised, I asked him how he did it. "By using the same kind of a line you gave me," was the answer.—J. Franz Norgren, Junius, South Dakota.

A Trick in Advertising

A little advertising trick worth using has been developed here. Take a long-distance queen cage and fill one of the holes with queen candy. Place in the cage a newly-emerged virgin queen, two workers for nurse bees and a drone that has recently emerged. This cage can be placed in a cool place on a counter in the store selling honey or inside of the show case, providing it is not too hot, and left on display for a number of days. The queen and the workers will live at least a week and probably longer, and the drone, if taken shortly after emergence, will live for four or five days. Mark the display "the happy family," or "the honey family." This gives the public an opportunity to see the entire bee family. Such a display costs the beekeeper next to nothing

and attracts lots of attention. Every beekeeper can procure a virgin queen almost any time during the summer season. Be sure in setting up the cage that you use a virgin queen and a newly-emerged drone.—H. B. Parks, San Antonio, Texas.

Improved Watering Device

There are many beekeepers who have to face the watering problem for their bees, especially these dry hot days. Sometimes bees persist in getting water from wells and horse tanks. In the horse tanks, especially the metal ones, many bees are drowned every day; they also prevent to some extent horses from drinking from the tank by their constant flying and buzzing about. To eliminate these difficulties, we placed deep pans on small stands near the apiary. We lined these pans with burlap, then filled them up with water. The bees took to these watering conveniences readily, because of their natural inclination to suck out moisture, rather than to draw it up openly. In a short time these burlap-lined pans and small troughs were alive with bees, while the metal horse tank was almost deserted.—Clarence Tontz, Crescent, Oklahoma.

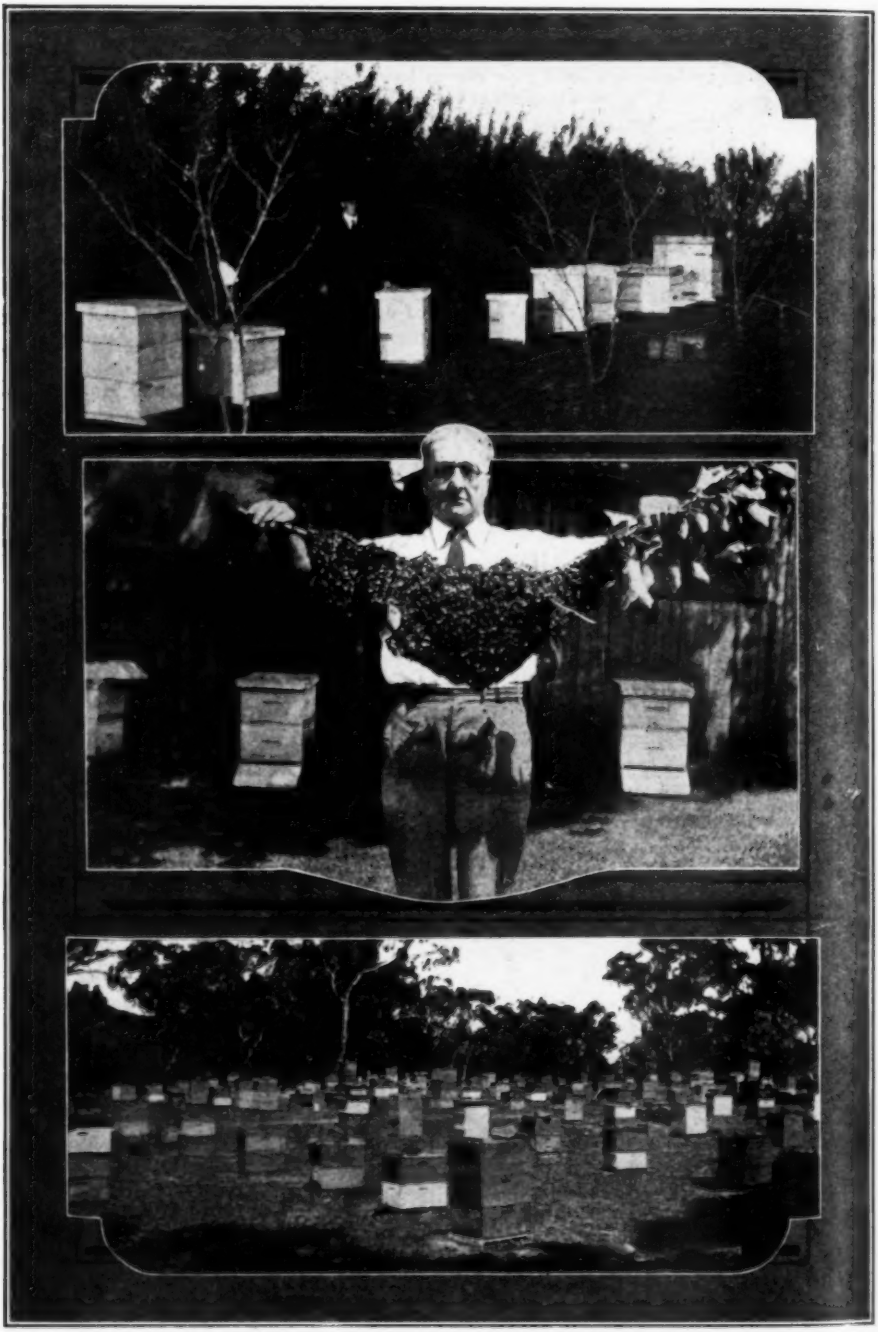
Surplus Honey from Blackberry

Our main honey flow is from the blackberry which lasts about four to six weeks. Various species of eucalyptus blossom each year, but about once every seven years they seem to synchronize and blossom all together. I extracted 3¾ tons from 60 colonies year before last from this flow which followed the blackberry and together lasted three months. The farmers' worst weed and curse here is the blackberry. Various experiments are being made to combat them but, selfishly speaking, I am glad to say without success. The honey is water-white, very mild in flavor and, when granulated, of a fine white grain. Our winters here are mild and snow is unknown except on the top of a distant range of hills.—H. E. Champion, Ulverstone, Tasmania, Australia.

Colony Excels in Comb Honey

At the beginning of last season I earmarked four colonies for sections and expected an average of about 120 sections per colony, which would have been pretty good for this island and my location. But one colony showed such remarkable aptitude for working in sections that I continued with it alone for section honey after a few weeks. Our season is a long one—from about the end of March to the end of December—and moderate in flow. During this period this colony completed 574 sections, every one of which graded not below No. 1, the majority being fancy or better. Also they did not at any time store dark honey, which all the other colonies got at various times during the season. My range is only a semicircle as I am located on the sea coast.—H. C. King, Bridgetown, Barbados, B. W. I.

Apiary of H. E. Champion in South Africa in winter.



Upper—Bees at Dominion of Canada Experiment Station, Rosthern, Saskatchewan, in charge of A. T. Homersham, Apiarist (shown in picture), and under the supervision of C. P. Gooderham, Dominion Apiarist. Middle—Another beekeeper? No. Mr. O. Keefe of New Brunswick, over in Canada, is a painter by trade and says he had never seen a swarm of bees before. Lower—A large commercial apiary in Australia, property of W. J. Barnes, Burnely, Victoria, Australia.

Food Department

Malitta D. Fischer

Honey in the Schools

It has been said that to launch any great movement successfully it should have its start in the public schools. Educational leaders have for a number of years been investigating the cause of much of the poor work done in the classroom and now realize that malnutrition, faulty diet, too late hours, physical fatigue and other wrong health habits are the cause. Thus all teachers are taking a greater interest in health problems, and food studies have a very important place in their programs. Teachers are more receptive to educational food releases now than they were several years ago.

Home Economics Now Taught in More Schools Than Ever Before

The home economics departments of our schools have made food education a special problem, and are responsible for disseminating this type of instruction. The home economics department today is quite different from what it was 10 years ago. In many of the junior high schools today, home economics is becoming as much a part of the school curriculum as science and language. There are new opportunities in home economics now because these unusual economic conditions are making the teachers see them. These same opportunities existed years ago but the teachers were not ready to take advantage of them.

Lowered budgets for homemaking school work and lowered budgets in the home offer a real challenge to the home economics teacher in the high school. The maximum registration is to be found in our junior high school type. The twentieth century home economics teacher is capitalizing on the opportunity offered by existing conditions and planning her instruction to help the child take his share in the family and community life. We find these courses under all sorts of titles —homemaking, health, social science, budget and food courses. Much time is being given to the planning of meals. Teachers in home economics particularly appreciate the necessity for keeping an open mind in such a program.

Free schools for the idle have been established in all parts of the country. In many cases these schools, primarily established for the unemployed, were manned by unemployed teachers. In New York state, for instance, more than 10,000 men and women were enrolled. The enrollment in New York City was reported in May as including 7952 men and women in vocational classes, and you may be interested in knowing that 1620 of this number chose homemaking classes.

Home Economic Teachers Especially Interested in Honey

Because of this great interest in food problems and home meal planning, beekeepers will find their local home economics teachers far more receptive to the honey story and far more anxious to have all the material they can get on honey for inclusion in their study of foods.

Many times it has been suggested to producers that they give the home economics teacher in their local high school a five-pound pail of honey and see that all material from American Honey Institute is sent her. The idea was that that teacher would have a honey lesson in her food studies and also have her students either prepare food with honey or demonstrate the use of honey as their laboratory lesson.

Many beekeepers have successfully done this. Most of them are doubtful, however. I recall one beekeeper sending in the name of his local home economics teacher and his second letter was as follows:

"I gave the Institute material to our domestic science teacher and then told her that if she wanted some honey for her class lesson, I would see that she got it and she took me up on it, think of that."

Home Economics teachers are moulding food habits. They are not only reaching the growing boys and girls but mothers and fathers. The home economics teacher in many cases today has accepted the challenge and is offering her knowledge and experience to her community in helping to better feed the unemployed as well as families who are living on very much reduced budgets. To make meal planning interesting and satisfying, too, the teacher finds it necessary to take advantage of

educational releases which trade associations are offering on the foods they are interested in.

The Evaporated Milk Association, the National Dairy Council, the State Home Economics Departments—all will tell you that they have been literally besieged with requests from teachers for helpful material and extra copies to pass on to their students and interested parents. In the case of American Honey Institute, it is apparent that hundreds of teachers are now interested in honey as a valuable food and are, as you will see from the letters quoted, anxious to show their students, both high school and adult, how to use it in the home.

Before quoting the letters of the recipe service and educational material available to home economic teachers by American Honey Institute, may I call your attention to other programs helpful in interesting your educational forces in honey?

Moving Pictures Help Popularize Honey

Have you ever tried to interest your superintendent of schools, or supervisor or whatever your educational director may be called, in showing the film, "The Realm of the Honey Bee"? Were you to tell your local educators of this film, I am sure they would thank you for the privilege you offered them. For your information, I quote from American Honey Institute's three-page mimeographed sheet on list of material available.

"U. S. Bee Laboratory has prepared a special film known as 'The Realm of the Honey Bee,' which is available to students, club members, homemakers or any one. This film is owned by the Department of Agriculture and is sent out only upon request for special dates. Reservations should be made directly through the Office of Motion Pictures, U. S. Department of Agriculture, Washington, D. C. The film is free except for express charges incurred in its shipping. There are nine copies available for distribution, five 16-mm. size and four 35-mm. size. It is well to make arrangements so that these films can be shown at schools where large audiences are secured.

"This film presents in a most interesting manner the life of the honey bee, the production of honey, weaving into the presentation the romance of the hive. Any group will enjoy it."

Wouldn't it be a good idea to make a reservation early and line up your local educators so that the film could be shown to high school students or perhaps at one of the "get-togethers" of all local parent-teachers' clubs.

Then there is the "Drama of the Bee Hive," as written by Professors Stacy, Buchanan, and Paddock at Iowa State College. You have but to glance over the dramatization to see what a splendid historical background the presentation has. It will be particularly helpful to children of all schools to participate in such a program. "Drama of the Bee Hive" should be called to the attention of your teachers. They may receive copies by writing direct to Iowa State College, Ames, Iowa, or American Honey Institute.

Just to see if editors of scholastic publications would be interested in making editorial comment on such a dramatization, a few letters with a copy of the drama attached were sent to editors of four magazines. Two of the editors responded rather quickly indicating that they were very much interested and would include a list of this dramatization. I quote the letter from "Practical Home Economics," for it is one of the most popular publications on this subject. Copies of it are to be found in practically all home economics libraries of both high school and college type institutions.

"Thank you for your letter of May 16. I read with interest the 'Drama of the Bee Hive,' and I shall be glad to give a short notice about it in an early number. I imagine many teachers will be interested in it." Signed Jessie A. Knox, Editor, Practical Home Economics, 468 Fourth Avenue, New York City.

"Farmer's Wife" agreed to mention this drama in their special extension News Letter which is sent to all home economics staff members of colleges and home demonstration agents.

I wonder if you ever have talked to your local high school teacher who has a nature-study class. If you have not, please do this some time. I recall an interesting experience with a teacher who had such a class. She arranged for a beekeeper to show her class a one-frame observation hive of bees at the same time giving a talk on bees and how honey was produced. Then she allowed a fifteen-minute period of the hour for a talk on honey and its uses. Each student was served with a honey confection, the formula for which was quickly demonstrated in the 15-minute talk on honey. Students who wished were allowed to take honey recipes for

their homes. Letters came to the Institute office later from mothers of some of the students asking for additional recipes.

Industry could well profit by the lesson of thrift and organization illustrated in the bee colony. Be sure to make a point of this when you try to interest your local educator in bees and honey.

Teachers Keenly Interested in Bees and Honey

Now for a few of the actual letters received to show you how the teacher is receiving the honey program American Honey Institute is conducting.

Union University, Department of Home Economics, Jackson, Tennessee: "We have supervised teaching of general home economics in Jackson Senior High School, a city school of about 750 enrollment. All girls are required to take one full year of home economics work before graduation. Realizing the value of the use of illustrative material we are anxious to build up our files, therefore I am writing to ask if you have any bulletins, booklets or displays that will be beneficial that you could send to help us out on honey. We hope to make it be a means of advertising honey as well as a teaching aid for us. At present there is an average enrollment of twenty-five girls in each of the four classes being taught. We shall appreciate very much any honey educational material which you will send us and assure you of our cooperation in putting your material before the girls." Signed, Willie Margaret Johnson, Home Economics Supervisor.

Woodbury College, Los Angeles, California: "The new Home Economics and Institutional Management Department of the Woodbury College in Los Angeles is very much interested in being placed on your honey mailing list. We are anxious to obtain new recipe literature both from the small quantity and institutional management standpoints for our school files. Thank you for any assistance you might wish to give us." Signed, Mona Van Dyke, Head of the Home Economics Department.

Senior High School, San Bernardino, California: "My advanced foods class is to make a study of honey and its uses in cookery. The class is composed of eighteen senior girls. Will you send us some honey material that we can use for this?" Signed, Lillian N. Reed, Teacher.

Lincoln Junior High School, 1500 Charles Street, Rockford, Illinois: "Will you please send me additional copies of the following material as my teachers were delighted with it and can make excellent use of the material in their foods classes: 100 copies of New Uses for Our Oldest Sweet, 100 sets of Honey Recipes. Thank you for past favors." Signed, Janetta E. Wetzel, Director of Home Economics.

There are hundreds—more than 500 to be definite—of teachers who have requested honey material this past year. Home demonstration agents have also instituted honey lessons in their homemakers' project clubs. The state home demonstration leader of Arizona requested material, and after receiving it asked for ten sets and her reply following receipt of the ten sets was:

"I wish to thank you for the ten sets of Honey Helpings which you have mailed me at my request. I am enclosing herewith a list of the home demonstration agents who will receive the sets I request. We expect to have many honey lessons." Signed, Frances L. Brown, State Home Demonstration Leader, Tucson, Arizona.

From New Jersey comes this one: "Will you kindly let me know just how I would be able to secure the honey leaflets which you put out. I want them for our home demonstration agents. Thank you for this information." Signed, O. J. Kathryn Francis, Home Demonstration Agent.

Public health nurses are requesting honey material, too.

"If you have any literature dealing with the use of honey in infant feeding, or any formulae for the use of honey in modifying cows' milk for infants, I should greatly appreciate it. I am a public health nurse. Most of my work consists of child hygiene supervision in the schools and home, and it is in this connection that I would like the honey literature." Signed Marion Curtis, R. N., Irma, Wisconsin.

But quoted letters will have to be dispensed with now. Many more are on file and if you visit the Institute office either on your trip to or return from the Century of Progress, why not stop off at Madison long enough to visit this office and see first hand some of the developments in its program.

When you are working with your schools, just remember that every home economic teacher on your school staff should have Honey Suggestions with recipes for a honey lesson, the "Drama of the Bee Hive" should be called to the attention of the teachers who direct school dramatizations, and surely the "Realm of the Honey Bee" should be brought before the superintendent or school supervisor so that he can arrange to have it shown at some auditorium gathering of students. And an ideal time for all such activity would be National Honey Week, November 13 to 18. If the actual program is carried on then, you must start your local contacts early so that proper advance arrangements may be made. Make your reservation for the government film early, too, by writing the government office indicated.

TOLD BY THE JAY

(Continued from page 481)

of armor, the sound of which was not unlike a Model T headed for the junk yard. Again Chief Thinkamus fared badly. A crock had telescoped over his helmet and he was nearly smothered in honey, wax, and bees. His body was so badly swollen all over that before he could go to bed that night his wife had to undress him with the can opener.

This defense was so effective that crocks of bees were placed at intervals along the walls, and the city of Zach was never beseiged again.

Just News

Editors

The summer meeting of the Pennsylvania Beekeepers' Association is scheduled for August 10 at Panadohta Lake in Crawford County.

The Vermont Honey Producers' Association will hold its annual meeting on August 15, at Burlington, during Farm and Home Week.

A summer meeting and picnic of the Empire State Honey Producers' Association is scheduled for Friday, August 4, at Rosland Park, Canandiagua, N. Y.

On Saturday, August 5, beekeepers from both sides of the international boundary line will hold a meeting at Queenston, Ontario, Canada. This is a few miles below Niagara Falls.

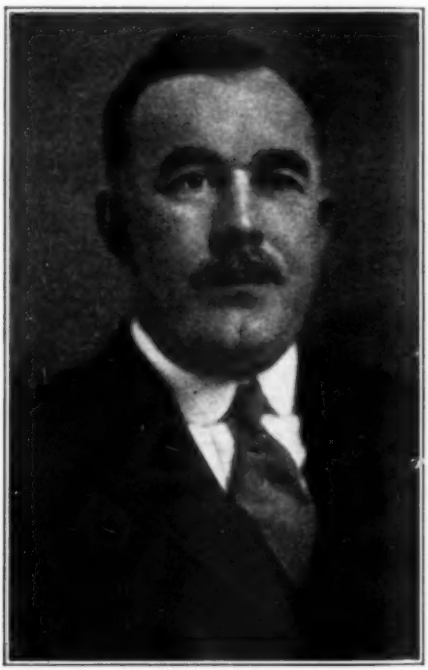
The summer meeting of the Ohio Beekeepers' Association, August 11 and 12, will begin with a social hour Friday evening at Anderson's Beach, which is about two miles east of Huron on Lake Erie. On Saturday, August 12, the entire program will be held at Ruggles Beach, about two miles east of Anderson's Beach. Free camping grounds and bathing privileges are available at Anderson's Beach.

An English one-pound note was recently donated to the American Honey Institute by J. W. M. Read and Edward H. Read, of Ponta Delgada, San Miguel, Azores. While far away from the influence of the Institute, these beekeepers thus show their anxiety to help in a common cause.

The freight rate on beeswax has been reduced, effective July 20. This will result in a considerable saving in transportation charges and should result in better prices at points remote from the market. The reduction amounts to 15 to 18 per cent on shipments in less than carload lots and 13 to 15 per cent in carload lots.

Michigan beekeepers, many of whom have produced a fine crop of honey this season, are enthusiastic about the summer meeting of the Michigan Beekeepers' Association to be held at the home apiary of O. H. Schmidt, R. F. D. No. 5, Bay City, Mich., on August 3 and 4. One of the attractions at this meeting is the modern extracting plant which Mr. Schmidt has installed and which, no doubt, will be put into operation for the benefit of the visiting beekeepers.

Prof. F. Eric Millen, Professor of Beekeeping in the Ontario Agricultural College, Guelph, Ontario, died on July 14 after an operation. Prof. Millen was well known among beekeepers in both Canada and the United States, and his untimely death is a great shock to his many friends of both nations. He was born July 4, 1882, and was therefore only 51 years of age. He graduated from the Ontario Agricultural



Prof. F. Eric Millen, 1882-1933

College with a degree of B. S. A. in 1913. He was instructor in beekeeping at the Michigan Agricultural College, East Lansing, Mich., from 1913 to 1916, when he accepted a position as associate professor of beekeeping in Iowa Agricultural College, which position he filled until May, 1919. He then returned to Ontario where he became professor of apiculture and provincial apiarist at the Ontario Agricultural College, October, 1919, which position he held to the time of his death. He was a good mixer, always active for the betterment of beekeeping, and greatly admired by all who knew him.

(Continued on page 505.)

Gleaned by Asking

Geo. S. Demuth

Newly Hived Swarm Kills Virgin Queen

Question.—I am sending to you a bee which I noticed the workers trying to kill just after I had put the swarm into a hive. What kind of bee is it?—Nathan F. Lockmiller, Florida.

Answer.—This is a queen bee, evidently a virgin. The swarm you hived was evidently an after-swarm, that is, a swarm accompanied by one or more virgin queens usually issuing seven or eight days after the prime swarm issued. When more than one virgin queen accompanies such a swarm, the bees kill all but one of them soon after establishing themselves in their new home. They do not wait until one of the young queens has mated before killing the others, so if the one remaining queen is lost in mating the colony is rendered hopelessly queenless.

Reducing Hives to One Story for Winter

Question.—Would it be all right to change a two-story hive to one-story when the second honey flow comes so that the bees may be more comfortable in winter?—Frank Pinter, Illinois.

Answer.—Some beekeepers reduce the hive to a single story for winter on the theory that it is easier for the bees to keep warm in a small chamber than in a large one, but in your locality, it is doubtful if this is advisable. Strong colonies in two-story hives having plenty of honey usually winter well in spite of the greater amount of room within the hive. To reduce the hive to a single story during the late honey flow might result in the queen's being so crowded for space to rear brood that the colony would not be strong enough to winter well. On the other hand, in localities which do not have a dependable fall honey flow, taking off the upper story would leave the bees short of stores for winter. In some cases, where the lower story is well supplied with honey, the upper story may be taken off and stored preferably in a heated room during the winter, then given back to the colony in the spring when stores are being used rapidly for spring brood-rearing. This upper story (food chamber) is especially valuable during the spring building-up period when a large amount of honey is needed to stimulate heavy brood-rearing.

Confining Fumes for Killing Wax-Moth Larvae

Question.—When using carbon bisulphide, Cyanogas, or paradichlorobenzine to kill wax moths in supers that are piled on top of each other in the open air with a hive cover on top and bottom, will the fumes generated be sufficiently strong to kill the larvae and the eggs of the wax moth? I have read of some one building a separate house to store surplus combs. Have you any suggestions on the detailed erection of such a house?—A. Hutten, New Jersey.

Answer.—By piling the supers in a tight pile and using a little extra material, the fumes of carbon bisulphide can be confined sufficiently to kill the larvae of the wax moth. As we understand it, none of the material that you mention can be depended upon to kill the eggs. If supers are in a tight pile, an ounce of carbon bisulphide, placed in a shallow pan at the top of the pile, will kill wax-moth larvae in three full-depth ten-frame supers or six comb-honey supers, provided, of course, that the pile is covered. An empty super may be placed on the top of the pile to make room for the shallow pan. Some beekeepers have experimented with tightly-sealed rooms in which to fumigate the combs. In such cases the supers must be piled criss-cross or arranged in some other way to permit the fumes to penetrate among the combs. Such a room could be made moth-proof so that the combs could be stored after fumigation without danger of further damage by the wax moth. However, a smaller amount of the fumigating material is necessary when the supers are piled in tight piles and each pile fumigated separately.

Percentage of Moisture in Honey Permitted by Pure Food Law

Question.—What per cent of moisture in honey does the United States Pure Food Law permit? In this vicinity what do you estimate would be the approximate moisture content of honey extracted after it was all capped? Also what is the moisture content of extracted honey when one-half capped over?—Gordon Bell, North Dakota.

Answer.—The definition of honey by the U. S. Department of Agriculture for the purpose of enforcement of the Pure Food Law sets the upper limit for moisture content at 25 per cent. In other words, according to this definition, honey containing more than 25 per cent of water would be considered adulterated. However, such honey would be entirely too thin for commercial purposes. The government grading rules specify that honey shall weigh not less than 11 pounds and 12 ounces per gallon to be eligible for United States grading rules. The percentage of moisture in honey in your locality would ordinarily be well under 20. Much depends upon the character of the season and how long the honey is left upon the hive. Sometimes honey that is only partly sealed may be as heavy as honey in combs

that are fully sealed. In other words, the amount of moisture in the air in the locality makes a great difference in the moisture content of the honey.

Sterilizing Diseased Combs

Question.—Is there a solution for treating combs containing American foulbrood? If so, where did this method originate and has there been any experimental research as to its efficiency?—Chas. C. Boyd, Illinois.

Answer.—In 1922, Dr. J. C. Hutzelman, Glendale, Ohio, announced that he had perfected a solution made of formalin and alcohol for disinfecting combs containing American foulbrood. This solution was tried out on a large scale by a number of beekeepers who reported success with its use. It was found to be especially valuable in case a large number of colonies were infected so that there were many combs to be sterilized. However, better control of American foulbrood during recent years has resulted in less interest in disinfecting solutions, since it does not pay to purchase the large amount necessary to immerse the combs unless there are many combs to be sterilized. On account of the greatly reduced number of diseased colonies, the tendency at the present time is to burn the combs after either killing the bees or shaking them into a clean hive on sheets of foundation. The workers in the Bee Culture Laboratory at the Bureau of Entomology, Washington, D. C., experimented at great length with the Hutzelman solution and also with a solution made of formalin and water. A bulletin was published by the Department of Agriculture describing the experiments with the formalin-water solution.

Requeening in the Upper Story

Question.—I wish to do quite a large amount of requeening. Can I do this successfully by placing a queen cell in a protector in the extracting super, with a queen excluder between the upper and lower stories? I would let the young queen emerge and mate from the upper story, then, after she begins to lay, run her into the brood-chamber below? Will she replace the old queen in the majority of cases? What will be the percentage of success with this plan?—George M. Sowarby, New York.

Answer.—So much depends upon the character of the season that it is impossible to give a definite answer to these questions. Under favorable conditions, this method of requeening would be nearly 100 per cent successful, while under other conditions it would be very disappointing. The plan works best, of course, if there is a good honey flow over a long period. In order to make the plan work successfully, there should be at least one full-depth extracting super between the chamber containing the old queen and the chamber in which the new queen is reared. Two excluders will be necessary, since both the old and the young queen should be confined to their respective chambers.

Toads in the Apiary

Question.—Do toads eat bees or bother them in any way?—Clyde Jones, Jr., Illinois.

Answer.—Yes, toads are sometimes somewhat annoying in the apiary but the damage they do is not great. A toad will sometimes sit near the entrance of the hive and grab laden bees as they attempt to enter. Some have advised using higher hive stands so that the toads can not so readily capture the returning bees, but usually all that is necessary is to take the toads into the garden where they will eat injurious insects instead of the bees.

Honey Alkaline in Reaction

Question.—Some so-called dietitian here in New York has recently made the statement that honey is acid in reaction. Elaborating on this mis-statement in a later broadcast, he added that patients suffering from acidosis should not eat honey, but instead should eat food that reacted alkaline. Can you tell me whether honey is an acid or an alkaline food?—Dr. Roy W. Beal, New York.

Answer by Dr. Louise Stanley, Chief of Bureau of Home Economics, United States Department of Agriculture.—The inquiries that you have received about honey refer, I assume, to the potential reaction as distinct from its acidity due to its organic acid content. According to data on mineral composition given by Sherman in "Chemistry of Food and Nutrition," fourth edition, 1932, honey would be basic, about 9½ cc. normal solution per 100 grams of honey. Analytical data from other sources indicate that the mineral content is extremely variable. The values for potassium in particular are lower in other sources that we have noted. Judging by these sources honey would be much more nearly neutral but still faintly alkaline.

Honey a Remedy for Eye Trouble

Question.—Have any articles been published on honey as a remedy for cataract of the eye?—H. Anton Meyer, Minnesota.

Answer.—Honey has been used for various ailments of the eye and articles have appeared in bee journals from time to time on this subject. According to reports, it appears that diluted honey dropped into the eye at intervals will check the progress of a cataract, at least in some cases. Many have reported beneficials effects by the use of honey for inflammation in the eye and for eye fatigue.

Introducing Virgin Queens

Question.—Is the method of introducing virgin queens different from that of introducing laying queens?—Len Bunch, Alabama.

Answer.—It is quite difficult to introduce a virgin queen to a full-sized colony. Nuclei will accept them much more read-

ily than full colonies. Most beekeepers prefer to have the young queens mated in nuclei, then introduce them to the full colonies after they have begun to lay. A virgin queen can usually be introduced successfully to a colony that has queen cells from which the young queens are nearly ready to emerge simply by running in a virgin queen not over twenty-four hours old. A virgin queen that has recently emerged is much more readily accepted than one over twenty-four hours old. In introducing either virgin queens or laying queens during a dearth of nectar, it is usually necessary to feed the colony several days before and after introducing. During a good honey flow it is sometimes possible to introduce virgin queens (if only a few hours old) simply by running them in at the entrance. Under some conditions virgin queens run in at the entrance of a colony having a laying queen will be accepted and the young queen will replace the old one. However, conditions are not often just right for this, so that it is not a dependable method of requeening.

Bees Move Honey from Food-Chamber

Question.—In my experience, the bees carry all the honey out of the food-chamber and store it in the brood-chamber after brood-rearing has ceased. How can one manage to have the food-chamber full without feeding?—Charles J. Davis, New Hampshire.

Answer.—It is quite unusual for the bees to move sealed honey after brood-rearing has ceased in the fall. They will carry down unsealed honey, but they do not often uncap sealed honey to move it below unless it is needed immediately. The food-chamber, therefore, should be well-filled and the honey sealed, in which case there is not much danger of its being moved.

Colonies Formerly Gentle Become Cross

Question.—During the past several years my bees have been very gentle and nice to work with. Last winter I moved them, and this spring they are so cross that one can not get within several rods of the hives without getting stung. I have not worked with them this year as usual. Could this be the reason for their being so cross, or what causes it?—L. W. Swan, Michigan.

Answer.—It is quite probable that this colony superseded its queen late last season and that the bees of the new queen are of a cross disposition. In this event, the remedy is to requeen the colony with a queen of gentle strain. Sometimes bees that were formerly gentle become cross, due to weather conditions or pecularities of the honey flow. During a buckwheat honey flow, for instance, bees that are ordinarily gentle often become quite cross in the afternoon when the buckwheat blossoms have been emptied of their nectar. Colonies sometimes become cross because of disturbance by skunks so that the bees are contantly on the lookout for trouble. Colonies in hives located where they are in the shade most of the day are usually crosser than colonies whose hives are located out in the open.

Bees Feed Queen Confined in Cage

Question.—Will the bees feed a queen through the screen when the queen is in a cage?—I. W. Westlund, Minnesota.

Answer.—The bees will feed their own queen or any queen to which they are not hostile through the screen of the cage. A queenless colony can be made to take care of a large number of queens by placing the cages on top of the frames with the screened side down.

Removing Queens When Frames Can Not be Taken Out

Question.—What is the best way to remove a queen from a hive in which the combs can not be taken out to find her?—Joe T. Priestly, Mississippi.

Answer.—This can be done by placing an empty super or box on top of the hive, then smoking at the entrance and drumming on the sides until most of the bees run up into the box. In the case of a box hive having the top nailed on, the entire hive can first be inverted, then the empty box fitted on the now-open top. After most of the bees have been driven into the box, an excluder can be placed between the hive and the bottom-board, then the bees can be dumped from the box in front of the hive as in hiving a swarm. As the bees go in, the queen is caught below the excluder where she may be found by lifting the hive and excluder carefully.

Effect of Age on Honey

Question—Does extracted honey become darker with age even though it is kept hermetically sealed? Does it improve or deteriorate in quality with age?—J. Frank Haan, Illinois.

Answer.—Well-ripened honey changes but little with age if kept in a tightly-sealed vessel, but if kept for a long time, say 25 or 30 years, it becomes perceptibly darker in color. Therefore, it is proper to say that it slowly becomes darker with age. In one respect, honey improves with age for at least a limited time. Soon after it is stored in the combs an analysis would show three kinds of sugar—levulose, dextrose and a small percentage of sucrose (ordinary sugar). After several months, the process of inversion is practically completed by which the remaining sucrose is converted into dextrose and levulose. In other words, the sucrose is digested and made ready for immediate assimilation.

Talks to Beginners

Geo. S. Demuth

The season has been extremely disappointing in large areas in the United States on account of the hot and dry weather in June. This is especially true in that part of the country where white clover and alsike clover are the chief sources of nectar. Portions of New York, Ohio, Indiana, Illinois and eastern Iowa appear to have suffered most from damage to white clover and alsike clover. In some localities in these states the yield of nectar was the poorest in the memory of the present generation. In the northern portion of the clover belt, the yield was much better, and where sweet clover is abundant, the yield has been fair. In some of the southeastern states, beekeepers have secured a good harvest, but in much of the great West, the honey crop apparently will be below the average.

These conditions have dampened the ardor of thousands of beginners who have carefully cared for their colonies in the hope of having each colony fill several supers with delicious honey. On the other hand, many beginners more fortunately located, especially those whose bees had access to sweet clover and those in the southeastern states have already harvested a fine crop of honey; and in many other localities there is still hope for a fall honey flow. This is especially true in the buckwheat region of New York and Pennsylvania and along the northern portion of the Atlantic Coastal Plain where goldenrod and other fall flowers are abundant. If good rains occur this month, fall nectar-bearing plants may supply a considerable amount of nectar in many other localities.

However, even in those localities in which the honey crop is extremely short, many beginners have greatly enjoyed caring for their colonies, have acquired much useful knowledge about bees and their care, and will no doubt enjoy the little surplus they have secured even though it may not last throughout the winter.

Taking Off the Supers

In some localities the bees have stored but little if any honey in the supers. In the case of comb-honey supers, they should be taken off and stored until they are again needed unless the bees are storing considerable honey in them now. It is not advisable to leave comb-honey supers on the hive during a slow honey flow when the bees work on only a few of the sections at a time. Extracting supers containing frames of foundation on which the combs were not built out should also be taken off unless the bees are now drawing out the foundation and building comb. If left on the hives, the bees are inclined to gnaw the edges of the foundation and varnish it over with propolis, thus greatly damaging it for further use.

In many cases the bees have filled or partly filled one or more supers, but have not fully ripened and sealed the honey. If they are still storing slowly as from sweet clover, all comb-honey supers should now be taken off, the sections sorted and the unfinished sections assembled in one or more supers and given back to the colony which is doing the best work in finishing. In the case of extracted honey, the supers may be left on the hive until the honey is well ripened. During hot, dry weather, the honey is ripened quickly so that if the bees are storing but little, the honey may be taken off and extracted at any time. However, it usually improves in quality if left on the hive a week or so after most of it is sealed.

In order to make sure that each colony has an abundance of honey during the rest of the summer, fall, winter, and early spring, it is well to leave the heaviest extracting super to function as a food-chamber. By rearranging the supers, placing the heaviest one next to the brood-chamber and the ones that are only partly filled above it, the bees will be inclined to carry down any unsealed honey from the supers above the second story and store it below. After most of the unsealed honey has been carried down, the remainder may be extracted. In other words, it is well to let the bees have their share first before the beekeeper takes his share.

In those favored localities where a good crop of honey has been secured, the beginner, in producing comb honey, should manage to have as many as possible of the sections finished by sorting as described above, but if the honey flow becomes too slow or ceases entirely so that the bees do not finish sections that are given back, it is advisable to take them all off and sort out unfinished ones. The heaviest

of these may be used at home or sold to the neighbors and those which contain only a small amount of honey can be assembled in a super and saved to be fed back to the bees when they will most readily take it.

In localities where there is a dependable fall honey flow, such unfinished sections can be saved to be put back on the hive when the fall honey flow begins, usually during the latter part of this month, or early in September. As a rule, it is better to put on extracting supers during the fall honey flow instead of comb-honey supers, although in some localities fall honey in sections can be sold quite readily. In most localities, the markets demand light-colored honey in sections while much of the fall honey is amber or dark in color.

Harvesting Extracted Honey

Honey that is to be extracted may well be left on the hives for a week or two after the honey flow has ceased except in localities where the bees begin to store darker-colored honey from buckwheat or other fall flowers. In such cases, all honey that is well ripened should be extracted before it becomes mixed with the darker-colored honey. Combs of unripe honey may have to be left to be mixed with a darker-colored honey, since it would be unwise to extract the unripe honey. It is not necessary to wait until all the honey is sealed before extracting. The bees often leave patches of honey in the lower portions of the comb unsealed, even though the honey may be well ripened.

When using a hand extractor, the honey should be warm, therefore, it is well to choose a warm day for extracting, and extract the honey soon after it is taken off while it still retains the warmth of the hive. If allowed to become cool before extracting, more honey is left in the combs, there is more danger of breaking the combs, the extracting process is slower, and the honey does not run through the strainer well. As it comes from the extractor, the honey should be strained through a cheesecloth to remove all particles of wax. If only a small amount of honey is extracted, the cheesecloth can be stretched across the top of a jar or other vessel and made somewhat saucer-shaped so that honey may be poured through it. The strainer can be arranged on the same principle on a small honey tank. If the honey is very thick, it may be necessary to dampen the cheesecloth with water so that the honey will pass through it. Those who have a considerable amount of honey to extract but do not have a honey tank can use the extractor itself as the tank and strainer. The honey as extracted can be put into other vessels, then when the extracting is finished, the reel can be taken out and the piece of cheesecloth tied over the top. Of course, the extractor would have to be washed first, since otherwise there would be particles of wax in the honey.

Storing and Marketing Honey

Comb honey should always be stored in a dry atmosphere, since it is inclined to absorb moisture from the air if stored in a damp place. Comb honey is often damaged in storage by the larvae of the wax moth. To prevent this, it is well to leave the honey in the supers for about 10 days after taking from the hive, then the supers may be piled in a tight pile and the honey fumigated with carbon bisulphide, which can be had at drug stores. To fumigate, place the shallow pan on top of the upper super, place an empty super over it, then pour one ounce of carbon bisulphide into the pan if there are six comb-honey supers in the pile. For any other number, a proportionate amount should be used. The pile of supers should then be covered to help confine the fumes. After a few hours, the supers may be re-piled in order to let the fumes of carbon bisulphide escape. As a rule, one fumigation is sufficient if applied about 10 days after the honey is taken from the hive.

In preparing comb honey for market, the propolis around the edges of the sections should be carefully scraped off. In doing so, great care is necessary to prevent gouging into the comb with the scraping knife. Comb-honey sections are now usually either wrapped in cellophane or placed in cartons for display in the markets. If the honey is to be sold direct to grocers or at a roadside stand, it is not necessary to use shipping cases, but if it is to be sent to a distant market, shipping cases are necessary.

Beginners having only a small amount of honey to sell can usually sell their entire output in the neighborhood. For extracted honey, it is not even necessary to purchase special containers unless there is a considerable amount of honey to be sold. Usually neighbors who purchase honey are willing to bring their own vessels, and the honey may be weighed out directly

(Continued on page 504.)

Sell and Buy Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Copy should be in the 15th of month preceding.

HONEY FOR SALE

We do not guarantee the reliability of honey sellers, although we require strict references from them.

FINE HONEY, packed to suit you. Ray C. Wilcox, Odessa, N. Y.

COMB and extracted. Reduced prices. Lewis Klaty, Carsonville, Mich.

CHOICE Michigan clover honey, new 60's. David Running, Filion, Mich.

FOR SALE—Extracted and comb honey. M. W. Cousinean, Moorhead, Minn.

AMBER honey in barrels. Sample, 6c. Peter W. Sowinski, Fort Pierce, Florida.

CLOVER, basswood, buckwheat and mixed extracted and comb. F. W. Lesser, Fayetteville, N. Y.

TUPELO honey, will not granulate. Shipped in any quantity. Anthony Bros.' Honey Co., Apalachicola, Fla.

EXTRACTED and comb, clover honey; color, extra white; satisfaction guaranteed. Tom Baldwin, Cecil, Ohio.

FOR SALE—White clover honey in 60-lb. cans. None finer. Satisfaction guaranteed. J. F. Moore, Tiffin, Ohio.

WHITE clover and amber honey in new 60-lb. tins. Also fancy and No. 1 comb. Harry T. Gable, Romulus, N. Y.

OHIO'S finest extracted white clover honey. Prices on request. Sample, 15c. Geo. Morrison, Cloverdale, Ohio.

CLOVER honey, choice, ripened on bees. Satisfaction guaranteed. Case or quantity. E. J. Stahlman, Grover Hill, Ohio.

HONEY FOR SALE—It will be to your advantage to communicate with me before buying your next lot. Thos. D. Sherfick, Shoals, Ind.

NEW crop clover honey and maple syrup, all you want, any time, in any container and at the price you are willing to pay, always. Write Griswold Honey Co., Madison, O., U. S. A.

HONEY—We sell the best. Combs in carriers of eight cases each; extracted, basswood, buckwheat, sweet clover, white clover and light amber. A. I. Root Co. of Chicago, 224 West Huron St., Chicago, Ill.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

FOR SALE—Well ripened white sweet clover honey. Don't let your customers be without honey. The stock we furnish will please them. Write today for prices. Colorado Honey Producers' Association, Denver, Colo.

STOLLER'S excellent quality clover honey, comb, cut comb and extracted. White stock, unexcelled. Write Stoller Apiaries, Latty, Ohio.

FOR SALE—Clover honey. Jos. Hoehn & Sons, Ottoville, Ohio.

NEW crop clover honey in new sixties. D. R. Townsend, Northstar, Mich.

AMBER honey, case, 3c lb. Sample, 6c. F. H. Harvey, Battle Creek, Mich., Rt. 4.

OAKVALE APIARIES—New clover comb honey. Forrest Dygert, Hammond, New York.

NORTHERN NEW YORK white clover comb and extracted honey. A. J. Wilson, Hammond, N. Y.

NEW YORK clover honey, white and amber 5-8c. Buckwheat in 60's. C. J. Baldridge, Kendaia, N. Y.

WHITE clover honey, New 60-lb. cans, by case, 6c; by ton, 5¾c. A. A. French & Son, Theresa, N. Y.

NEW crop fancy white comb, $2.50 case. Extracted light clover, 4½c lb. John Burghardt, Grand Island, Nebr.

HARRIS' 55th CROP—Fancy clover extracted in new sixties, case or carload. J. N. Harris, Saint Louis, Mich.

WATER white comb and extracted clover honey. Superb quality. Priced right. Howard Grimble, Holcomb, N. Y.

FINEST new comb and extracted clover honey, extra white, case or quantity. Write Wilbur W. Green, Antwerp, Ohio.

HOWDY'S HONEY—White, clover extracted in sixties, ready for shipment. Also baking grade. Howard Potter, Ithaca, Michigan.

NEW crop white clover extracted honey in new 60-lb. cans. State how much you need. Leonard S. Griggs, 711 Avon St., Flint, Mich.

FOR SALE—New York clover honey, comb and extracted, put up in any way to suit purchaser. Write for prices. E. L. Lane, Trumansburg, N. Y.

FANCY white clover comb, $3.00 case; No. 1, $2.50; amber, $2.00; mixed, $1.75. White clover extracted, 5½c; amber, 4c. C. B. Howard, Geneva, N. Y.

NOW on hand, new crop clover honey, case to carload, in new 60-lb. cans and cases, or in any way you wish put up. Sample free. W. S. Earls & Son, New Canton, Ill.

NEW CROP SHALLOW FRAME COMB HONEY, also section honey, nice white stock, securely packed, available for shipment now. Colorado Honey Producers' Asso., Denver, Colo.

RASPBERRY HONEY—In 60-lb. cans, for $6.00 a can. In 10-lb. cans by mail, postpaid up to and including fourth zone, for $2.00 a can. Sample by mail, 20c. Elmer Hutchinson & Son, Lake City, Mich.

TOWNSEND'S quality Michigan clover honey is now being extracted. New cans and cases. Will unload a small quantity at only 6c per lb. on track here. Order now, as prices are sure to advance later in the season. Write E. D. Townsend & Sons, Northstar, Michigan.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only or on C. O. D. terms except when the buyer has thoroughly established his credit with the sellers.

WANTED—Carload or less good clover or alfalfa honey. Ray Wilcox, Odessa, N. Y.

WANTED—Comb and extracted honey. Mail sample, state quantity and price. Sherfick Farms, Shoals, Ind.

WANTED—Comb and extracted honey; state price and condition. Earl M. Alexander, New Paris, Ohio.

WANTED—A car or less quantity of white honey, in 80-lb. cans. Mail sample and quote lowest cash price for same. J. S. Bulkley, Birmingham, Mich.

WANTED—Honey and beeswax. Beekeepers will find it to their advantage to communicate with us. Please send samples, state quantity available and prices. California Honey Company, Hamilton & Company, Agent, 108 W. Sixth Street, Los Angeles, California.

FOR SALE

SAVE queens. Safin cages now 15c; ten for $1. Allen Latham, Norwichtown, Conn.

FOR SALE—Queen bees, 35c each. Pure Italian bees. Graydon Bros., Greenville, Alabama, Route 2.

BEST quality bee supplies, attractive prices, prompt shipment. Illustrated catalog upon request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Assoc., Denver, Colo.

ELECTRICAL honeycomb uncapping knife, 10-inch thermostatic heat control, 180° F. lowest, 205° F. highest heat, cost 2c a day to operate. Price, $11.50. When ordering state your voltage, 110-volt or 120-volt. Paul Krebs, 8000 Fulton Ave., Detroit, Mich.

FOR SALE — Fine quality queen-mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Sup ly Co., Almont, Mich.

BEE SUPPLY SPECIALTIES

METAL EYELETS in your frames will stop the WIRE SAG which is responsible for most SAGGED COMBS. METAL EYELETS, per 1000, 60c. Handy tool for inserting eyelets, 25c. Superior Honey Co., Ogden, Utah.

BEES AND QUEENS FOR SALE

WHOLE colonies of bees, if advertised for sale in these columns, must either be guaranteed free from disease, or, if not so guaranteed, the exact condition of the bees and the conditions of sale must be clearly stated in the advertisement; or, it will be satisfactory if the advertiser will agree to furnish a certificate of health from some authorized bee inspector at time of sale.

QUEENS, 25c, 5 for $1.00. Highest grade, fine three-banded Italians. G. H. Merrill, Greenville, S. C.

MOUNTAIN GRAY Caucasian queens. After June 1, untested, 50c; 6, $2.75; 12, $4.80; 25, $9.50; 50, $18.00; 100, $35.00. Safe arrival and satisfaction. Lewis & Tillery Bee Co., Rt. 6, Greenville, Ala.

ITALIAN QUEENS, 25c; 2-lb. pkg. with queen, $1.50; 3-lb. pkg. with queen, $2.00. Bees by the pound. All guaranteed free of disease. Write D. Eells, Star Route, Morgan City, La.

QUEENS, QUEENS—Pure bred Italians, 40c each; tested, 80c each. They are sure to please you. Quality, service, complete satisfaction assured. Let us supply your needs. Honey Bee Apiaries, Sandwich, Ill.

QUEENS, QUEENS—Hollopeter's high producing, gentle, beautiful Italians. Untested, 2, $1.00; 12, $4.50. Tested, $1.00. Now at their best during buckwheat and goldenrod bloom. J. B. Hollopeter, Rockton, Pa.

GOLDEN Italian queens that produce good workers, and gentle to handle. Satisfaction guaranteed. Select tested, $1.50; tested, $1.00. Untested, well worth 75c, now for 50c. D. T. Gaster, Randleman, R. F. D. 2, N. C.

EXTRA yellow Italian queens, health certificate and satisfaction insured. Over 15 years a breeder. Prices, 1 to 11, each, 60c; 12 to 23, 50c; 24 to 36, 40c; over 36, 35c. Tested, $1.15 each. Hazel V. Bonkemeyer, Randleman, Rt. 2, N. C.

WESTERN headquarters for package bees and Italian queens. 100 two-pound packages with select young laying queens, $1.20 each; three-pound, $1.60 each. Most northern breeder in the West. Less express charges. Free circular. J. E. Wing, Cottonwood, Calif.

LARGE YELLOW NORTHERN BRED ITALIAN QUEENS, producing practically pure yellow bees. Breeders chosen for gentleness and honey records. Twenty years' experience. See June ad. Select untested, 75c; select tested, $2.00. Standard guarantee. Dodge Alexander, Station G, Toledo, Ohio.

GOOD QUEENS for summer and fall requeening. Gentle, productive, three-banded Italians. The kind you like to work with. Select young laying queens, 35c each; three, $1.00; ten or more, 30c each. Prompt shipment. Safe arrival guaranteed. Accredited by the Alabama Department of Agriculture. H. C. Short, Fitzpatrick, Ala.

CHOICE bright Italian queens that are a pleasure to work with and be proud to own. Requeen with stock that has been bred and selected in the North the past 30 years for good winterers, hustlers, gentleness and fine color. One queen, $1.00; 2 or more, 90c each; $9.00 dozen. Breeders, $6.00 each. Emil W. Gutekunst, Colden, N. Y.

MISCELLANEOUS

GENERAL JOB printing done by A. Matson, 21513 Donaldson, Dearborn, Mich.

BEEKEEPERS—Improve sources of nectar by planting vitex trees, or seed. Two-year-old trees, 40c; one-year-old trees, 25c. New tested seed at $1.00 per ounce. All prepaid. Joe Stallsmith, Galena, Kansas.

ANNUAL report American Honey Producers' League, including 14 papers and complete discussion of 1932 convention for $1.00 membership included. Address V. G. Milum, Vivarium Building, Champaign, Illinois.

Wanted Shipments of Old Combs for rendering into Wax.

WRITE FOR FULL PARTICULARS

THE FRED. W. MUTH CO.

PEARL & WALNUT CINCINNATI, O.

STOLLER'S

THRIFTY NORTHERN BRED ITALIAN QUEENS

Bred for honey production, this strain is reared and tested in a great clover belt, assuring you of the very best in queens.

Untested, 50c each.
Tested, $1.00.

THE STOLLER APIARIES
LATTY, OHIO

August and September Requeening

Why it should be done and how to do it is explained in our book, "About Bees." A card will bring it. Frequently we get letters containing statements like this: "I am thinking of buying some bees from Mr. —. He says they are your stock. If this is true, I will buy them but want to be sure. When did you furnish him queens, and how many?" This shows our queens increase the value of your bees. There must be a reason. For over thirty years I have selected the finest queens from the thousands reared with which to requeen our apiary. From these our breeders are selected. All colonies are requeened every year to improve the stock and some colonies are requeened two or three times as better queens are found. It is expensive to rear queens in this manner but the many letters from our customers prove our queens are worth more than we ask for them.

Prices—1, $1.00; 5, $4.75; 10, $9.00; 100, $75.00.

We will take in payment a good quality of white extracted, allowing ten queens per case of 120 lbs.

Jay Smith

ROUTE THREE VINCENNES, INDIANA

TALKS TO BEGINNERS

(Continued from page 501.)

into these vessels. For this purpose, a honey tank provided with a good honey gate is convenient, but if not available, the extractor can be used for drawing honey off into retail packages. When honey is sold locally in this way, it is not necessary to heat it, especially if it is to be consumed within a short time. As cold weather approaches in the fall, the honey will granulate so the honey tank must be emptied before this occurs. The ordinary five-gallon can holding 60 pounds of honey is excellent for storing honey that is to be kept until cold weather.

Care of Extracting Combs

After the honey has been extracted, the extracting combs should be put back on the hives so that the bees can clean them. As a rule, it is well to wait until evening before putting these wet combs on the hive, since otherwise the bees would become greatly excited and robbing might be started. The safest place to store the combs during the remainder of the summer is on the hives so the bees can take care of them and protect them from the wax-moth larvae. A strong colony can take care of four or five sets of extracting combs if tiered up above the food-chamber. Often instead of carrying the honey from the wet combs down into the food-chamber or brood-chamber the bees store it in small patches in the extracting super. If they do not take it down before cold weather, these combs may be run through the extractor again to remove this honey.

In localities where fall nectar-bearing plants are abundant, it is well to have an extracting super above the food-chamber of each colony to provide storing space for fall honey if any should come.

(Continued on page 505.)

Wanted - Honey

White and Extra Light Amber Grades
Carloads or less carload lots

Send samples and best price freight allowed New York

Honey Packers, Inc., 230 Park Ave. New York City

TALKS TO BEGINNERS

(Continued from page 504.)

In localities where the main honey flow occurs in August and September, as in the buckwheat region and where goldenrod and aster is abundant, beginners should watch their colonies carefully and give super room as fast as needed. While many produce comb honey from buckwheat and other fall flowers, most beekeepers located where the main honey flow comes in the fall take the honey in extracted form. If extracting combs are not available, frames of foundation may be given, but supers containing frames of foundation should not be put on the hives until the bees show that they are willing to build comb. They do this by elongating the cells in the upper portion of the brood combs with new wax.

Queens Queens

Hollopeter's high producing Italians now at their best during the buckwheat and goldenrod bloom. Choice untested queen, 1, 50c; 2, $1.00; 12, $4.50. Tested, $1.00. Address

JASON B. HOLLOPETER, Queenbreeder

WHITE PINE BEE FARMS, Rockton, Pa.

(With Gleanings from 1911)

JUST NEWS

(Continued from page 496.)

The following names have recently been added to the list of honey receivers for the American Honey Institute: Roy K. Bishop, Orange, Calif.; C. A. Wurth, Riverside, Calif.; A. L. Matthews, Ceres, Calif.; W. K. Lott, Box 480, Orlando, Florida, and A. D. Hiett, 1304 Main Street, Lynchburg, Va. Those who wish to donate honey instead of cash for the American Honey Institute may send their donations to their nearest receiver. The honey will be sold and the proceeds sent to the American Honey Institute. These names should, therefore, be added to the list published on page 442 of the July issue.

TOO LATE FOR CLASSIFICATION

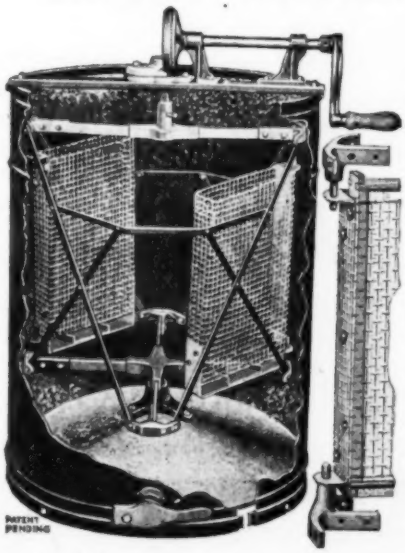
PEDIGREED show-type collie pups, $6.00 to $10.00. Mrs. Irvin Fay, Houma, La.

FOR SALE—Thirty tons Michigan's finest clover honey. Sample, 10c. Ralph Blackmar, Portland, Mich.

WANTED—White clover extracted honey. New cans only. Cash on arrival. Clover-Blossom Honey Co., Columbus, O.

FOR SALE—50 hives Italian bees in ten-frame hives with equipment. Guaranteed free of disease. Price reasonable. C. Israel, 5840 N. Talman Ave., Chicago, Ill.

Removable Reversible Basket Extractors



Style.	Size of can.	Size of basket. width.	Price.
Style 15-2 basket	20x30	10"	$20.00
Style 15-4 basket	24x32	10"	27.50
Style 17-2 basket	24x32	12"	25.00
Style 20-2 basket	24x32	13"	25.00
Universal holding 4 deep or 8 shallow frames			29.50

LITTLE WONDER, 4-fr. extractor, $12.50
Weight, 40 lbs. Can go by post.

Woodman's Reversible Basket Extractors are built so that the baskets can be lifted up and out for cleaning or disinfecting or to insert a capping basket to whirl cappings dry. Reel and baskets all of heavy material, well braced riveted construction, no solder is used. A 50-frame Radial and other smaller size extractors are offered. Send for special circulars.

GET OUR SPECIAL PRICES ON TIN CANS AND PAILS

Cartons, Wrappers, Cases, etc., stating the quantity you can use.

A. G. Woodman Co., Grand Rapids, Michigan, U. S. A.

Leininger's Strain of Italians

We have been breeding queens for 50 years, and have developed a wonderful strain of Italian bees, that are equal to the very best that money can buy, at the following prices:

Untested, 50c each; tested, $1.00 each; breeders, $10.00 each.

Address FRED LEININGER & SON, DELPHOS, OHIO.

"Cloverland" Italian Queens, 30c Ea.

TESTED QUEENS, 75c EACH

Large quantities priced on demand. We have been extensive shippers of package bees for a number of years. Our package prices will be found in our ad on page 375 in the June issue. Our queens are solid yellow, their bees are beautifully marked with bright yellow bands. Our customers like them because they are gentle, hardy, prolific and disease resistant.

Satisfaction, safe arrival guaranteed.

CLOVERLAND APIARIES, HAMBURG, LA.

Silver Gray Carniolans

Requeen with this wonderful race of bees. They are very hardy, gentle, prolific, great honey gatherers and builders of very white combs; use mostly wax in place of propolis; not inclined to rob like Italians; winter extra well and build up quickly in the spring. Our queens are reared from selected mothers noted for their honey gathering qualities, gentleness, color and not inclinded to swarm. No package bees for sale. No foulbrood here. Safe arrival and satisfaction guaranteed. Season, June 1 to Dec. 1.

UNTESTED QUEENS, 50c EACH

A. M. Middleton, Fort Edward, N. Y.

LOWEST PRICES IN 19 YEARS

EDWARDS METAL ROOFING

Steel prices are going up. But as long as our present supplies last we will sell metal roofing at pre-war prices and PAY THE FREIGHT.

Protect your property from fire, lightning, wind and weather before prices advance. Write today for Catalog 80. Send your roof measurements.

THE EDWARDS MANUFACTURING CO.
833-883 Butler St. Cincinnati, O.

Better-Bred Italian Queens 25c, Any Quantity

Special introductory offer..10 queens for $2.35
3-lb. package for late increase, $1.50 each
Select Breeders, $2.00 each.
Orders filled promptly or money refunded.

CALVERT APIARIES, CALVERT, ALABAMA
A. L. Webb

Mott's Northern-bred Italian Queens

PRACTICALLY NON-SWARMING

75c each; 25 or more, 70c each; 50 or more, 65c each. Guaranteed purely mated, or free queen, means tested in the end. Ask for list with testimonials. Satisfaction guaranteed.

E. E. MOTT & SON, Glenwood, Mich., U. S. A.

3-Band Italian Bees and Queens

One to ten 3-lb. package bees with queens, $1.75 each; over ten, $1.50 each. Young mated queens, 25c each, any number queens or bees.

D. C. Jackson, Funston, Georgia

BRIGHT GOLDEN ITALIANS

We are offering those large, uniform, prolific, quality queens, properly raised and carefully caged.

They produce large, gentle, yellow bees that are such excellent honey makers and are so pleasing to handle. Every owner admires and praises them.

1 queen, 75c; 2 to 9, 50c; 10 and over, 45c.

STEVENSON'S APIARIES, Westwego, La.

MILLER'S

Old Reliable
3-banded Italians

They Satisfy

20 Years a Breeder

There is a big difference in QUEENS.

BALANCE OF SEASON.....30c EACH

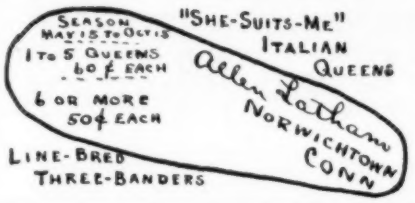
JOHN G. MILLER

723 C STREET, CORPUS CHRISTI, TEXAS

Wanted White Extracted Honey

Send Sample and best price Frt. Paid to Cincinnati, O.

THE FRED. W. MUTH CO.



Queens, 25c Each

For one or one hundred. Palmetto Queens are superior in quality and sell at regular queen prices. A trial order will convince you. Orders booked in advance at no extra charge. Canadian orders, 15% extra for exchange.

C. G. ELLISON, BELTON, S. C.

Norman Bros.' Queens

25c By Return Mail

BRIGHT THREE-BANDED ITALIANS

Order NORMAN BROS.' queens and bees. They will prove to your satisfaction. When you realize how our 3-banded Italian queens will help to increase your honey profits, you will want no other kind. We have spared neither labor nor expense to make them the best. Every queen guaranteed purely mated, safe arrival and satisfaction. If not, return them, and we will replace or refund money.

Norman Bros.' Apiaries, Ramer, Alabama

Queens by Return Mail

25c

Send me your orders. I rear queens to please and gain your patronage. Not cheap queens in value. Try them at the price, and if they don't prove to be as good as queens that are selling for twice as much, I will gladly refund your money, or replace them. You are to be the sole judge. Untested queens, 25c each. Tested queens, 50c each. All queens guaranteed purely mated and to give perfect satisfaction and safe arrival. No stamps accepted.

N. Norman - Lapine, Alabama

Queens - Queens - Queens

Select untested Italian queens, 40c each, or $35.00 per 100. Tested queens, $1.00 each.

Italian Bees

2-lb. pkgs. with queens.....$1.50 each
3-lb. pkgs. with queens..... 2.00 each

Service

Prompt service on any quantity. Safe arrival and complete satisfaction guaranteed.

Toombs County Apiaries, Lyons, Ga.

BUY BERRY'S RELIABLE QUEENS NOW

Prices Double in 1934

After nearly forty years of Select Breeding, we have a strain of three-banded Italian Bees that are unsurpassed for disease resistance (especially European foulbrood), and honey production. Having several branches for the production of honey located in the Northwestern States and Western Canada gives us an excellent opportunity to test out our strain from both honey production as well as climatic standpoints.

Prices of Pure 3-banded Italian Queens

1, 50c each; 2 to 6, 40c each; 6 to 50, Each, 33½c; 50 to 100 up, 30c each.

Queens warranted purely mated and absolutely satisfactory. No disease. A certificate of health with all shipments.

M. C. BERRY & CO.
BOX 684, MONTGOMERY, ALABAMA

Moore's Strain

Leather Colored Italian Queens
Superior Stock

50c Each

World-wide reputation for honey-gathering, hardiness, gentleness, etc., since 1879. Safe arrival and satisfaction guaranteed. Circular free.

J. P. Moore

MORGAN KENTUCKY

Mountain Gray Caucasian Queens

Accredited and certified by Alabama Department of Agriculture. The strain of Caucasians we offer you is the result of many years of selective breeding from stock we originally imported from Russia. The character and volume of business being sent us from year to year is evidence they are pleasing. We invite you to join this band of beekeepers that use Caucasians. Untested queens, any number, 50c each; tested, each, $1.50; select tested, $2.50 each. Nuclei bees for show purposes. Write for prices. Safe delivery and satisfaction guaranteed.

BOLLING BEE COMPANY, BOLLING, ALABAMA

Buy Now and Save Money

These bargains in bee supplies are offered by the distributors of Root Quality Bee Supplies. The goods may be slightly shop-worn, but are serviceable and real bargains. Select what you want and send in your order. Some items listed on our last bargain page were all sold out within three days after the advertisement appeared. ALL GOODS ARE F. O. B. SHIPPING POINT.

Send orders for the following to

A. I. Root Co. of Philadelphia

10 Vine St., Philadelphia, Pa.

3—489—Root's wax presses, single, $14.50 each.

20 pairs medium drill bee gloves, without fingers, 40c each.

3—G4090—Storage tank, 80-gallon, honey-gate attached, $11.50 each.

7—215—Sets of 5 wooden letters for honey sign, nailed only, 80c each.

1—"How to Keep Bees," 75c each.

10—Packed rims, shallow depth, nailed and painted, $1.50 each.

10—Packed rims, full depth, nailed and painted, $2.00 each.

2—Swarm Catchers, old style, without poles. 75c each.

Send orders for the following to

A. I. Root Co. of Syracuse

Midland Ave. and Tallman St., Syracuse, N. Y.

1—4-frame Buckeye extractor, 12½-inch pockets. Complete equipment for hand and power. Perfect condition. Cost $260. Special price, $50.00, f. o. b. Syracuse.

Send orders for the following to

F. A. Martiny

2822 Magazine St., New Orleans, La.

400—Root standard eight-frame hive-bodies, $60.00 per 100.

50—Root standard eight-frame shallow supers, $20.00.

F. O. B. New Orleans, La.

Send orders for the following to

F. E. Burgess

642 Elm Rd., N. E., Warren, Ohio

60—Single-tier display cases for 24 beeway sections, $3.00 per 10.

30—Single-tier display cases for 24 4 x 5 sections, $3.00 per 10.

Send orders for the following to

A. I. Root Co. of Indianapolis

121 N. Alabama St., Indianapolis, Ind.

42—Alexander feeders, 20c each.

5—Alexander feeders, Buckeye loose bottom hive, 20c each.

4—Division board feeders, nailed, 20c each.

300—Jumbo brood frames, $3.36 per 100.

4 KD—22552—Plain section supers, 4x5x 1⅜, the lot, $4.00.

4 KD—22532—Plain Section supers, 4¼x 4¼x1½, the lot, $3.20.

These goods are all worth the money.

Send orders for the following to

A. I. Root Co. of Norfolk

7 Commerce St., Norfolk, Va.

ALL 8-FRAME SIZE

19—One-story metal covered hives, in 1s, K. D., at $2.00 each.

50—Inner Covers, in 5s, at 95c for 5.

130—Shallow Supers (empty), in 10s, at $3.10 for 10.

285—Shallow Supers, with frames (⅜" top-bar), in 5s, no foundation, $2.70 for 5.

10—Shallow Supers with frames (⅜" top-bar), in 1s, no foundation, at 65c each.

85—Shallow Supers (empty), in 5s, at $1.60 for 5.

105—Metal Covers in 5s, at $3.40 for 5.

55—Wood Covers in 5s, at $1.75 for 5.

165—Bottom Boards in 5s, at $1.70 for 5.

245—Hive Bodies (empty), no frames, in 5s, at $2.15 for 5.

25—Hive Stands, in 5's, at $1.75 for 5.

Send orders for the following to

The A. I. Root Company of Iowa

Council Bluffs, Iowa

245—8-fr. 7-wire and wood queen excluders, each, 42c.

43—8-fr. 3-wire and wood queen excluders, each, 39c.

200—8-fr. Hive Bodies, without frames, per 5, $2.15.

300—8-fr. Beeway Section Supers, empty, per 5, $1.43.

300—10-fr. Beeway Section Super, empty, per 5, $1.48.

200—8-fr. Wood Hive Covers, per 5, $1.70.

100—10-fr. Wood Hive Covers, per 5, $1.95.

3000—Shallow Extracting Frames, per 100, $2.50.

5—Woodman Section Fixers, each, 9oc.

2—4-fr. Buckeye Power Extractors, 9⅝" pockets, $59.50.

1—4-fr. Buckeye Power Extractors,, 12½" pockets, each, $79.50.

MAGNOLIA STATE
QUALITY QUEENS

"RIGHT NOW SERVICE"

Full capacity production is enabling us to continue offering you bargain prices on our fine queens.

We are extremely grateful for the volume of business we have been favored with this season. All other work out of the way, our entire time will be devoted to queen rearing, improvements and advancements, that will in any way help to serve you better.

There is no substitute for **QUALITY**, and a few cents makes a whale of a difference.

Prices—Single queens, 35c; 3 for $1.00; 12 for $3.60; and 100 for $27.50. 3-banded Italians only.

Purity of mating and perfect laying guaranteed.

JENSEN'S APIARIES
CRAWFORD, MISSISSIPPI

"For your honey's sake support the Institute."

---

30 Cents each for good untested 3-band Italian queens, any number. Now Ready.

D. W. Howell, Shellman, Ga.

Queens By Return Mail 25c

Pure Italian queens that will prove to your satisfaction, and if they don't I will gladly replace them or refund your money. You are to be the judge. Good queens at a low price that are equal to other queens that are selling for three times as much. All queens are guaranteed to be purely mated, and safe arrival guaranteed in U. S. A. and Canada. Tested queens, 50c each. Virgin queens, 20c each. No stamps accepted.

John A. Norman, Ramer, Alabama

YORK'S
Bees and Queens

Return mail service on queens, any quantity. Foundation stock, Jay Smith's strain large yellow Italians. These bees are very gentle and unsurpassed for honey production.

Untested Italian queens, 75c each; 3 for $2.00; 10 for $6.50, or $50.00 per 100.

2-lb. packages Italian bees with select queens, $2.00 each.

3-lb. packages Italian bees with select queens, $2.50 each.

Safe arrival and complete satisfaction guaranteed. Your rush orders will be appreciated and handled satisfactory to you. Lewis Beeware and Dadant's Foundation at catalog prices.

York Bee Co., Jesup, Ga.
The Universal Apiaries

The Cheapest Queens

are not always those quoted at the lowest price. **RESULTS COUNT.** It takes so little honey to pay the difference in a really good queen and just an ordinary queen that you can not afford to take chances on getting poor queens.

Certified and Accredited by the State Dept. of Agriculture. Safe arrival and satisfaction guaranteed. Write for complete price list. 1 untested, 35c; 3 for $1.00. Tested, 60c each.

J. M. CUTTS & SONS
R. F. D. NO. 1. MONTGOMERY, ALA.

Honey Labels

Pack your honey in white glass jars made especially for honey, and use a fine honey label. You can buy some of the finest honey labels in 4 colors for only $2.20 for 500, with your name and address. Catalog showing all labels in colors FREE. Send for it.

30 Designs

The A. I. Root Co., Medina, O.

Caucasians

have all the good traits of Italians, plus extra gentleness, less swarming, more prolific, longer tongues, less robbing and more dependable workers. Wintered here out-of-doors, and bred in a climate like their native land—severe winters, cold windy springs—thus insuring their good qualities. Breeders from Prov. Terek, Caucasus.

Carniolans

Prolific at all times, very gentle, best of winterers, build up rapidly during the changeable weather of spring, build beautifully white combs, and most excellent workers. One customer reports an average of 435 lbs. per colony, extracted, spring count, for the whole yard of over 50 colonies. Have supplied many State Agricultural Colleges and Experiment Stations in U. S. and Canada with them. My own and Jan Strgar imported strain.

PRICES BOTH RACES:

1 untested queen	50c
6 untested queens	$2.75
12 untested queens	5.00
Tested queens, each	1.00

Both these races give better results in northern and western sections of our country where the flow comes early. Use some Caucasians or Carniolans among your Italians, both will improve your Italians in gentleness and honey gathering. August is a good time to do general requeening or to replace old and failing queens and those cross ugly colonies.

ALBERT G. HANN
GLEN GARDNER NEW JERSEY

Golden Italian Queens

Select untested, noted for their gentleness and honey-gathering. 1, 50c; 6, $2.75; $4.50 per dozen. Satisfaction guaranteed in U. S. and Canada. Health certificate with each package.
E. A. SIMMONS APIARIES, Greenville, Ala.

3% Banking by MAIL

A BANK FOR SAVERS ANYWHERE WHO PUT SAFETY FIRST.

E.B. SPITZER PRESIDENT
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THE SAVINGS DEPOSIT BANK CO. MEDINA OHIO

DON'T CHOP THE GRASS. Shave the ground with "Marugg Special" imported dangel cutting edge scythe. Catalogue free. Address The Marugg Co., Dept. B, Tracy City, Tenn.

Hilbert Method Cut Comb Honey

Write for our new catalog which will include free full information on Cut Comb Honey.
James E. Hilbert, Traverse City, Mich.

Wanted Fancy White Comb Honey

Not Wrapped but in Glass-Front Wood Cases
State best price Frt. Paid Cincinnati, O.

THE FRED. W. MUTH CO.

Morrison's Northern Queens

STRICTLY THREE-BANDED STOCK

If you want Italian queens with years of selecting and breeding back of them (22 years of experience) for gentleness, honey gathering, less swarming and capping their honey white, requeen with Morrison's line-bred stock.

UNTESTED	$0.50 each
TESTED	1.00 each
BREEDERS	5.00 each

Pure mating, safe arrival and perfect satisfaction guaranteed.

George Morrison, Cloverdale, Ohio

4 Queens for

$1.00

OUR QUEENS ARE BETTER THAN EVER.

Through August, September and October will offer Select Untested three-banded Italian queens at 25c each, any amount.

Our queens are guaranteed in every way to be good and are especially guaranteed against supersedure for one season.

The Crowville Apiaries
Winnsboro, Rt. 1, La.

Queens and Package Bees

Superior Italian Stock

•

Select young laying queens, each, 30c.
100 or more at 25c each.

•

2-lb. pkg. bees with queen.$1.25
3-lb. pkg. bees with queen 1.75

We ship fresh from our yards within 24 hours after receipt of your order.

•

Citronelle Bee Co., Inc.
Citronelle, Alabama

QUEENS 25c Ea. "Diamond" QUEENS Ea. 25c

BRIGHT ITALIANS

Our queens are reared on honey through both natural honey flow and feeding. Scientifically reared for PRODUCTIVENESS and GENTLENESS. Replace your "soldiering" bees with our "DIAMOND" queens, or compare their performance with any others. That will tell the tale.

If package bees are wanted, please write for price.

Health certificates furnished. Service and quality guaranteed.

GARON BEE COMPANY, DONALDSONVILLE, LA.

25c QUEENS 25c

Do You Know

that we have reared more than 360,000 queens? We supply only 100% queens and any customer can be sure of satisfaction or money refunded.

First quality queens, 25c, any number.

Merrill Bee Company - - Buckatunna, Miss.
(MISSISSIPPI'S OLDEST SHIPPERS)

KNIGHT'S

Dependable Queens

are now

30c Each

NO CHARGE FOR CLIPPING

LINE-BRED THREE-BANDED LEATHER-COLORED ITALIANS. ACCREDITED AND CERTIFIED BY ALABAMA DEPARTMENT OF AGRICULTURE.

They clean up European foul-brood, and are the best winterers as well as the best honey-gatherers.

JASPER KNIGHT, Hayneville, Ala.

"YES"

Accredited and Certified Queens

By State Department of Agriculture

My prices are lower than ever before, so do not take the risk with old queens. If you will requeen your colonies with my high grade Accredited Queens, you will have made the most important step in securing a bumper honey crop. To know them, try them out; they give results that will amaze you.

Select Untested Queens

30 cents each

Pure mating, safe arrival and entire satisfaction guaranteed.

Hayneville Apiary Co.

W. B. Harrell, Prop. Hayneville, Ala.

Index to Display Advertisers

Berry & Co., M. C....507
Bolling Bee Co. 507
Burgess, F. E....508
Calvert Apiaries 506
Citronelle Bee Co., Inc....511
Cloverland Apiaries 506
Crowville Apiaries, The 511
Cutts & Sons, J. M. 509
Dadant & Sons 456
Edwards Mfg. Co....506
Ellison, C. G 507
Falconer Mfg. Co., W. T....454
Garon Bee Co. 511
Gulf Coast Bee Co....450
Hann, Albert G. 510
Hayneville Apiary Co. 512
Hilbert, James E. 510
Hollopeter, J. B. 505
Honey Packers, Inc. 504
Howell, D. W. 509
Hunt & Son, M. H....451
Jackson, D. C....506
Jensen's Apiaries 509
Knight, Jasper 512
Latham, Allen 507
Leininger & Son, Fred....506
Lotz Co., August 455
Martiny, F. A 508
Marugg Co. 510
Merrill Bee Co. 511
Middletown, A. M....506
Miller, John G....506
Moore, J. P. 507
Morrison, George 510
Mott & Son, E. E....506
Muth Co., The Fred W....452, 454, 506, 510
Norman Bros.' Apiaries 507
Norman, John A. 509
Norman, N. 507
Red Stick Apiaries....454
Root Co., The A. I.,
Back Cover, Inside Front Cover, 450, 509
Root Co. of Chicago, A. I....455
Root Co. of Indianapolis, A. I....508
Root Co. of Iowa, The A. I....451, 508
Root Co. of Norfolk, A. I....508
Root Co. of Philadelphia, A. I....508
Root Co. of Syracuse, A. I....454, 508
Rusch & Son Co., A. H....454
Savings Deposit Bank Co....510
Simmons Apiaries, E. A....510
Smith, Jay 504
Stevenson's Apiaries 506
Stoller Apiaries 504
Stover Apiaries 455
Toombs County Apiaries 507
White Pine Bee Farms 505
Williamson, Chas. J....454
Woodman Co., The 505
York Bee Co. 509